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PERCEIVED SOCIAL SUPPORT AND EXERCISE SELF-EFFICACY
IN CARDIAC REHABILITATION

BY
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for the Master of Science in Nursing Degree
in the College of Nursing
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COLLEGE OF NURSING

THESIS APPROVAL FORM

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ABSTRACT

Social support and exercise are widely known to effect outcomes in the cardiac client. Social support has been reported as influencing motivation for health behavior, including exercise. This study explored dimensions of social support within cardiac rehabilitation and perceived impact on participation and exercise self-efficacy. Structured by a 14-item interview guide, two focus group sessions of male participants generated qualitative data. Content analysis revealed staff, peers, and the physical environment and context (situational influences) as the most often cited sources of social support influencing program participation and exercise self-efficacy. Whereas support from professionals positively influenced participation early in the program, peer support prompted participants to plan and look forward to exercising beyond program completion. Interventions perceived to promote a safe environment were also perceived as social support.

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CHAPTER I

INTRODUCTION

Social support and exercise are widely known to have an impact on recovery and health promotion for the cardiac client. Effects of social support during the acute illness experience and in the long term have been extensively documented; increased morbidity and a higher risk of mortality are the outcomes for cardiac clients whose social support needs are not met. Following a cardiac event (heart attack or heart surgery), progressive exercise promotes recovery and contributes to control of heart disease risk factors, such as dyslipidemia. For this reason, the main focus of cardiac rehabilitation programs is exercise (Melander, 1990; Mullinax, 1995).

Formally, there are four phases of cardiac rehabilitation: Phase I constitutes the period of hospitalization; Phase II begins at discharge from the hospital and is associated with supervised, monitored exercise; Phase III involves more progressive, supervised activity; Phase IV is the maintenance phase, or life-long rehabilitation (American Association of Cardiovascular and Pulmonary Rehabilitation, 1995; Wenger & Hellerstein, 1984). Prominent goals and outcomes of cardiac rehabilitation and exercise training are: (a) slowing the progression of coronary artery disease, (b) guiding clients in the return to previous activity levels, and (c) optimizing exercise capacity. However, benefits of cardiac rehabilitation may not be realized if the client does not participate as prescribed or does not complete the program. It has been suggested that program dropout is an ongoing problem for many cardiac rehabilitation programs (Mullinax, 1995). Even

after completion of the rehabilitation program, compliance to the prescribed exercise regimen tends to decrease (Cosmoss, 1988).

Social support can increase compliance in long term behavior change (Cosmoss, 1988; Mullinax, 1995). Although compliance is composed of multiple variables, studies pinpoint social support as a necessary element for continued health behavior (Vidmar & Robinson, 1994). For example, Melander (1990) has discussed the relationship of social support and compliance to medication and dietary regimens. Mullinax (1995) examined the positive effects of social support on exercise compliance and continued participation in cardiac rehabilitation.

Second to the problem of client dropout and continued exercise compliance after cardiac rehabilitation is the lack of knowledge to understand the nature and function of social support in the cardiac rehabilitation setting. Peer support is recognized within groups, but professional support is not consistently believed to be social support as it is seldom reciprocal in nature and rarely continues as an ongoing relationship over time (Norbeck, 1981). Conversely, Yates, Skaggs, and Parker (1994) and Moser (1994) describe professionals as potential sources of social support for cardiac patients while Bramwell (1990) delineates the role of the nurse or health care team as facilitator of social support. Many authors state the need to describe the types and sources of social support that maximize success of outcomes dealing with life style modification (McCauley, 1995; Yates, Skaggs, & Parker, 1994). It may be that social support in the cardiac rehabilitation setting is related to program participation and post-rehabilitation exercise compliance.

Purpose of Study

The purpose of this study was to investigate clients' perceptions of social support within the cardiac rehabilitation program. Specifically, this study sought to: (a) identify sources of social support and whether the professionals within the program were perceived as sources of social support; and (b) describe the influences of social support on current participation in cardiac rehabilitation and self-projected continued exercise compliance (exercise self-efficacy). Particular attention was given to examining the perception of the value of the cardiac rehabilitation program in terms of social support and reinforcement of exercise behavior.

Theoretical Foundation - The Health Promotion Model

The Health Promotion Model (HPM) by Pender (1996) is a multidimensional theory attempting to delineate components of an individual's motivation for health behavior. The HPM (see Figure 1) organizes components of health behavior within a framework of three construct categories: Individual characteristics, behavior-specific cognitions and affect, and behavioral outcome.

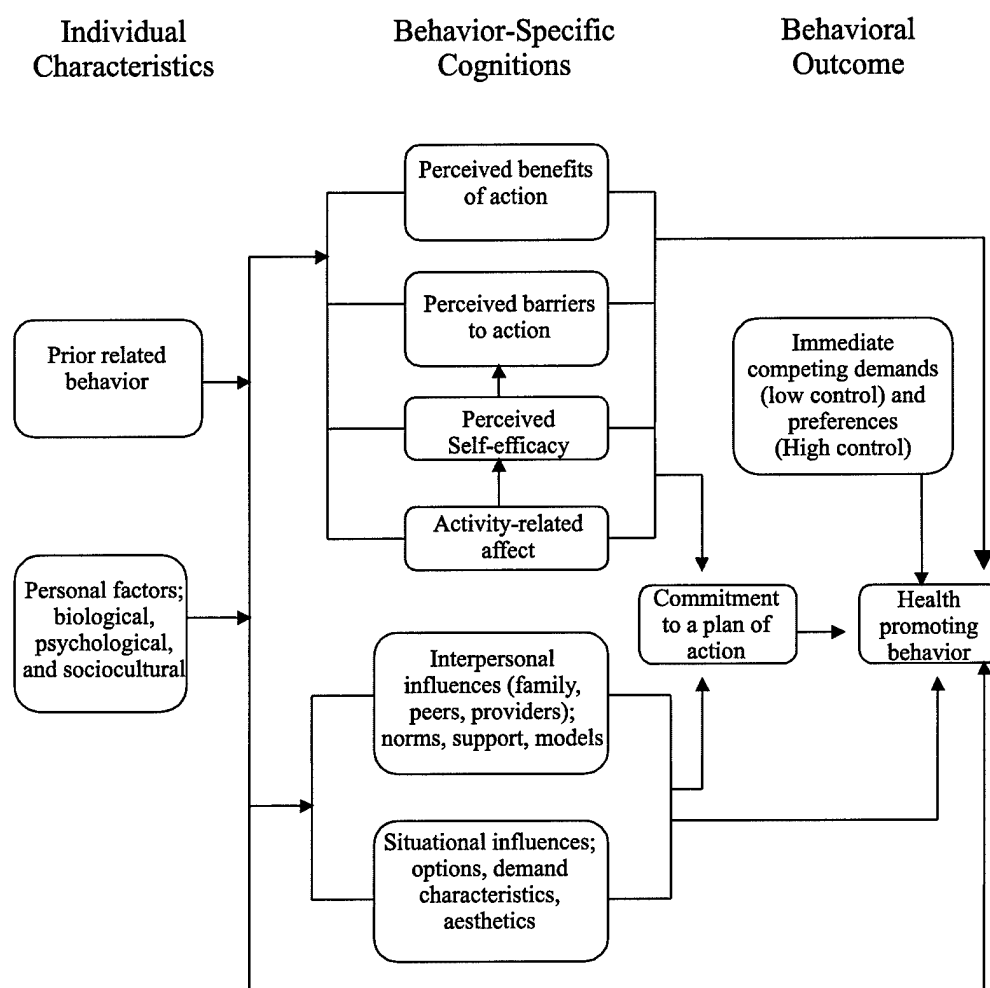


Figure 1. Revised Health Promotion Model (Pender, 1996)

Note: from "Health promotion and nursing practice (3rd ed.)," by N.J. Pender, 1996, pg. 67, Fig. 3-2, Revised Health Promotion Model. Copyright 1996 by Appleton and Lange, adapted with permission.

Assumptions of the HPM reflect nursing and behavioral science perspectives. The HPM assumes that individuals are active in the regulation of their health behaviors and in changing the environmental context for health behaviors. Developed from Pender's revisions of the Health Belief Model, the HPM integrates many concepts of the expectancy-value model of human motivation and social learning (cognitive) theory within "a nursing perspective of holistic human functioning" (Pender, p. 53, 1996).

Social Cognitive Theory

Social cognitive theory is an interactional model of causation in which "environmental events, personal factors, and behavior act as reciprocal determinants of each other" (Pender, p.53). This model takes into account the individual's self-beliefs which includes self-attribution, self-evaluation, and self-efficacy (Bandura, 1986). Included in the HPM, perception of self-efficacy, as described by Pender (1996) is "a judgment of one's ability to carry out a particular course of action" (p. 54). Self-efficacy is increased when the person is provided with opportunity for mastery of experiences, vicarious learning, verbal persuasion, and agreeable somatic responses to particular situations. According to this theory, self-efficacy is a predictor of future behavior (Bandura, 1986).

Expectancy-Value Theory

The expectancy-value model for motivation purports individuals will more likely invest their efforts toward goals that are valued and possible to achieve. In short, the perceived benefits of change and goal directed behavior must outweigh the perceived barriers, leading to the individual placing value on the behavioral change. As stated by

Pender (1996), "Prior knowledge of personal successes or the successes of others in attaining the goal/outcome and the personal confidence that one's success will be the same or even superior to others is of motivational significance and serves as the basis of subjective expectancy of successful change" (p.53). Pender notes that intrinsic and extrinsic benefits, such as improved mental alertness from exercise and a pleasing social environment, motivate and ready the individual for action. She states that repetitive, habitual behaviors continue to be facilitated each time the behavior takes place and directly influence motivation for this behavior. As displayed in the HPM, this positive feedback influences the perception of self-efficacy, the barriers to behavior, and the perceived benefits of the behavior, thereby exerting an indirect effect on the outcome of health promoting behavior. For example, an individual's decreased blood pressure, as a result of continued exercise and the health professional's encouragement, pose indirect effects. Pender conceptualizes prior related behavior as a sub-concept of individual differences while self-efficacy and benefits/barriers to health behavior are conceptualized under the category of behavior-specific cognitions and affect.

Other Determinants of Health Behavior in the HPM

Because many personal characteristics cannot be changed, they are pertinent when considering the target behavior. In the HPM, personal factors (biological, psychological, and sociocultural) are conceptualized as individual differences and are proposed as having a direct affect on both behavior-specific cognitions and affect (Pender, 1996).

Activity-related affect, situational influences, and interpersonal influences are additional concepts within the construct category behavior-specific cognitions and affect.

Activity-related affect pertains to the emotional responses associated with the activity itself or with the environment in which the action takes place. The type of emotional arousal associated with behavior influences whether an individual will repeat the behavior, or maintain the behavior for any length of time (Pender, 1996).

Situational influences speaks of the environment and the individual's perceptions of how the environment, or situational conditions, convey an agreeable and desirable climate. Pender (1996) states, "Individuals are drawn to and perform more competently in situations or environmental contexts in which they feel compatible rather than incompatible, related rather than alienated, safe and reassured rather than unsafe and threatened" (p. 71). Cues that trigger action present a situation that may directly affect behaviors.

Interpersonal influences "are the cognitions concerning the behaviors, beliefs, or attitudes of others" (Pender, 1996, p. 70). Families, friends, and health care providers are examples of sources exerting this type of influence on health behaviors. Social norms, modeling (vicarious learning through observation), and social support affect an individual's inclination to engage in health-promoting behaviors. The inclusion of social support into the HPM is the result of significant findings in studies on social support and behavioral outcomes (Pender, 1996).

Behavioral outcome is the third major construct in the HPM. First, a commitment to a plan of action must be in place to initiate a behavioral event. Commitment to a plan of action is indirectly strengthened by perceived benefits of performing the health behavior. Pender notes that readiness to act and commitment to a plan of action may be in place,

but if barriers outweigh the readiness to act, target behaviors will be unlikely to occur. Furthermore, commitment to a plan of action without strategies to reinforce the behavior, results in “good intentions” and often leads to failure to perform a valued health behavior (Pender, 1996, p.72).

Aside from the influences on behavior just described, immediate competing demands and preferences are described in the HPM as the final conscious influences precipitating a possible alternate behavior. Usually, the alternate behavior is viewed as a behavior over which the individual has little control; e.g., environmental contingencies of work or family care responsibilities. Pender (1996) states, “competing preferences can be differentiated from barriers such as lack of time, because competing preferences are last-minute urges based on one’s preference hierarchy that derail a plan for positive health action” (p. 72).

Conceptual Map for Study

Although the revised health promotion model (Pender, 1996) includes a comprehensive view of variables associated with motivation of health behavior, this study focused on the interpersonal and situational influences within two cardiac rehabilitation programs and explored the perceived impact of these variables on continued participation and exercise self-efficacy. Synthesis of the information from the literature guided the construction of a conceptual map (see Figure 2). This model postulates that perceived social support (interpersonal or situational) in the cardiac rehabilitation program affects the behavioral outcomes of exercise compliance (program participation) and exercise self-efficacy associated with future exercise.

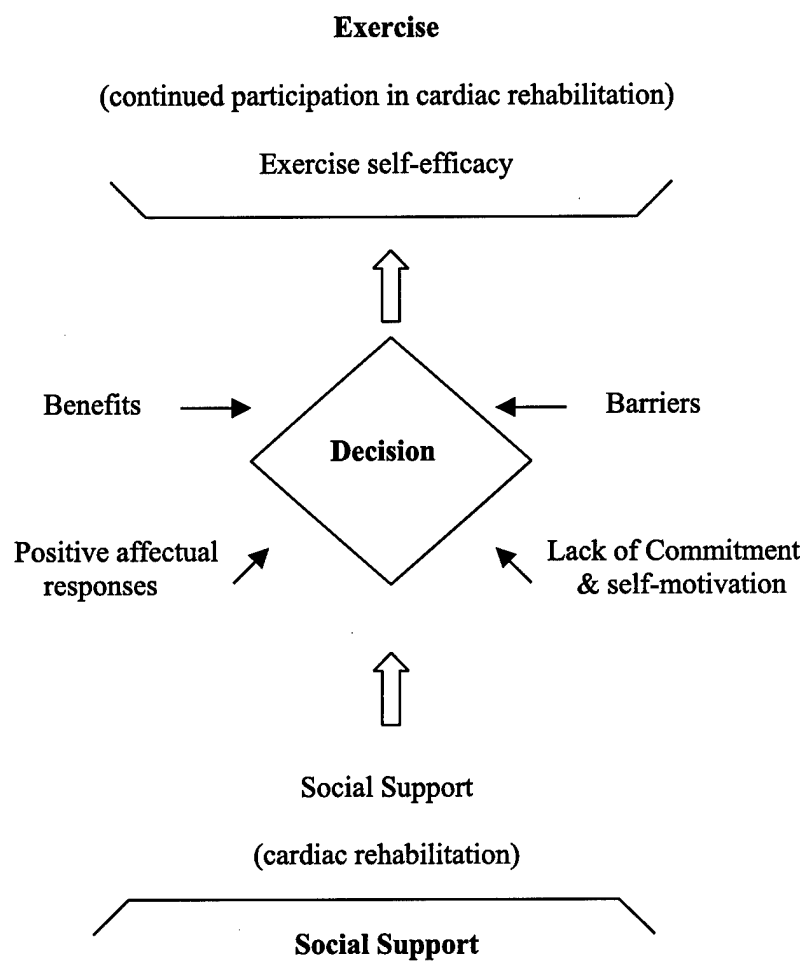


Figure 2. Conceptual Map for Study

Summary

A social and theoretical problem was introduced to delineate the importance of this study. The particular study aims were stated and supported by a theoretical foundation for the expansion of the concepts social support and exercise self-efficacy as related to the population of cardiac clients in a rehabilitation program. A conceptual map that guided the design of this qualitative study was presented.

CHAPTER II

LITERATURE REVIEW

The purpose of this review is to present the background and evolution of the proposed relationship of social support and exercise compliance. The three sections in this review are (a) Descriptions of Social Support, (b) Exercise Compliance and Theories of Behavior Change and (c) Motivation for Change and Social Support. Each section of the literature review begins with background research or research in the general population and progresses to presentation of research within the cardiac population. The final paragraph of each section is a brief summary. Synthesis of the literature review and study questions are presented as the conclusion of this chapter.

Social Support

The past 20 years have unveiled a plethora of studies on the description and classification of the different types of social support and the perception and utility of social support by those experiencing disability or physiological insults. Social support is of such importance in a number of acute and chronic illnesses that insufficient social support has been proposed as a risk factor for mortality (House, Landis, & Umbersome, 1988).

Types, Sources, and Timing

Social support should be considered in terms of perceived availability of support and the actual support that can be provided directly, e.g., emotional support (Keeling, Price, Jones, & Harding, 1996). Woods, Yates, and Primomo (1989) proposed that different

types of social support are more or less effective, depending on the illness or specific demands of the illness condition. Examples of social support as described by Woods et al. are instrumental (aid), emotional, or informational. These authors acknowledge that the severity of the disability determines what type of social support is valued the most. For example, in a disability that requires much functional (instrumental) aid/support, such as with severely affected stroke victims, informational support may not be as effective or perceived as valuable as the instrumental support (Glass & Maddox, 1992).

Social support is believed to affect recovery and maintenance of health in the cardiac patient by two general mechanisms: behavioral and physiologic. That is, social support has an impact by either influencing behavior known to affect cardiac risk, or by mediating the effects of stress when acting on the neuroendocrine system (Moser, 1994). Currently, there are two models that describe the relationship of social support to health outcomes (see Appendix A). In the first model, termed the *stress-buffering model* (Keeling et al., 1996; Yates et al., 1994), social support is seen as affecting mental and physical health and providing benefit as levels of stress increase. The second model shows social support having a direct influence on health outcomes regardless of the level of stress.

In these models, “health outcomes” refers to an individual’s mental or physical health status. The direct effect model assumes that illness can be broken into a series of stressors that must be managed in order for recovery to illness or adaptation to occur. This model depicts social support as influencing an individual physiologically, psychologically, and behaviorally. For example, in the direct model, social support may

induce emotional changes affecting the immune or neuroendocrine systems, elevate self-esteem and perceived security, and discourage unhealthy behaviors (Keeling et al., 1996). The direct effects of social support can be conceived more easily during the post-hospital period, such as during out-patient cardiac rehabilitation.

With indirect effects on health outcomes, social support is seen to affect the individual's coping and adaptation, which provides for physiological, behavioral, and psychological benefits (Keeling et al., 1996). Within the cardiac population, almost all studies report exploration of the indirect effects of social support. Yates, Skaggs, & Parker (1994) noted that buffering, indirect effects of social support are most important during times of stress, e.g. just before surgery, during the cardiac event (while the patient is experiencing chest pain), and during the period just before and following discharge from the hospital. This type of support is best when the source is someone of close ties, like the spouse or family member. Similarly, instrumental support is best provided by individuals with whom the patient has weaker ties and who can link the patient to a broader, more diverse social network. Yates et al. suggest that the health care provider can be very effective in this role.

Assessing Social Support in Clinical Practice

Norbeck (1981) denoted a gap in the literature for description of studies incorporating social support into clinical practice. She proposed a framework of the elements and relationships of social support and outcomes in clinical practice. The four components of the model are person, environment, health-illness, and nursing actions. Norbeck (1981) described two types of interventions that are possible according to her model:

(a) interventions that focus on changing an inadequate level of social support to an adequate level through influencing the structure, functioning, or use of the person's social support network, and (b) interventions that provide direct support or other assistance to the person during a period of time (or crisis) rather than attempting to influence the adequacy of social support through the indigenous network.

Like Pender (1996), Norbeck (1981) contends that there are *person* and *situational* influences on the need and availability of social support. Here are the examples given: Adolescents and infants clearly have different needs; individuals have different life experiences, cultural influences, and coping abilities; females tend to have larger social networks than males. Norbeck reported that these same differences (age, sex, and individual differences), influence the availability of social support. Further, available social support was related to the variables, income and self-esteem.

Situational factors influencing the need and availability for social support are clearly evident in such examples as crisis situations, or increasing disability. Norbeck's (1981) review of the literature is congruent with the findings in O'Brien's (1993) study: Social support availability, in terms of increasing functional needs, is usually less available because the person has less energy for involvement and, because of increasing disability, access to previous support networks becomes more difficult.

Planning and intervention strategies are outlined by Norbeck (1981). She noted the importance of assessing environmental and support needs. With intervention, Norbeck distinguished between social support and the professional helping process, using the definition of social support that is congruent with expressions of positive affect, having

people to call on for assistance, and reciprocity. Lastly, Norbeck (1981) reported that her model is to be used as guide for research to increase knowledge about the patient's social environment.

Keeling et al.(1996) addressed social support from the theoretical perspective of implications for health care providers. The direct and indirect nature of the benefits of social support was discussed while emphasizing that social support may have physiological, psychological, or behavioral influences. Congruent with Norbeck's (1981) and Yates et al. (1994) discussion, Keeling et al. contend that an individual's perceived or actual support can influence the effectiveness of support. To Keeling et al. assessing the person's natural network, focusing interventions on efforts to enhance the helper-receiver relationship, and identifying reasons for the lack of support are key to improving outcomes.

Keeling et al. (1996) concluded that strategies for intervention by health care professionals can focus on the provision of additional support to the patient, for example, through self-help groups, or the enhancement of existing support/provider/receiver relationships, thus promoting self-esteem. Keeling et al. believe that patients can be taught how to promote support by focusing on their self-presentation. In other words, individuals who appear to be coping well may discourage support just as much as those who appear not to be coping well. Providing care givers with opportunities for social integration and emotional or informational support (by the health professional), were presented as two important actions aimed toward the support network.

Social Support in Chronic Illness and Recovery

O'Brien (1993) reviewed the literature on effects of social support during chronic illness. Her literature review supported that greater levels of perceived emotional support from family enhances well-being, provides better social adjustment, lowers levels of depression, increases morale, and facilitates effective coping.

O'Brien (1993) conducted a study to identify the primary types and sources of social support for individuals with multiple sclerosis (MS). The Norbeck Social Support Questionnaire (NSSQ) (Norbeck, Lindsey, & Carrieri, 1981) was used to survey a nonrandom sample of twenty-four men and seventy-seven women. Multivariate analysis revealed that spouse/partner provided the greatest amount of functional support (aid). O'Brien (1993) reported that this was contrary to Norbeck et al. (1983) normative data that revealed friends as providing the most functional support. Correlations indicated that individuals with higher levels of disability and length of illness perceived less overall support from spouse/partner and family. Only 27% of this MS sample ($N = 101$) reported health care workers as part of their network.

In a qualitative study that examined the process of adjustment after myocardial infarction (MI), Johnson and Morse (1990) noted the importance of a balance of perceived needs and social supports/assistance. They reported that if this balance does not exist, adjustment will be delayed. This phenomenon is also described in the literature review by Yates et al. (1994). Possible negative aspects of support take place when the helper or provider is perceived to be attempting to control or regulate the recipient's behavior. Conversely, a perceived need for emotional or functional support that is not

being met can hinder the adjustment process and recovery outcomes (Johnson & Morse, 1990). Johnson and Morse gave an example of an imbalance in this process and observed that when the patient is constantly the receiver of support they began to feel indebted to others and this subsequently intensified their feelings of uselessness. This finding supports those in Yates et al.'s (1994) literature review that relationships characterized by reciprocity seem to promote health more than those characterized by inequitable exchange.

A content analysis of adjustment after myocardial infarction (MI) by Miller, McMahon, Garrett, and Ringel (1989) addressed research questions of methods of coping. One particular question asked "Who was assisting the patient in life adjustments post infarction, and what type of support was given?" Data for examination was collected from a larger study on medical regimen adherence and societal adjustment. Typed transcripts of nurse/client interactions from 50 subjects were reviewed for inclusion of content that addressed patients' life adjustment problems following MI.

Analysis revealed that the support from the health care team was often perceived as negative or ambiguous with almost no mention of emotional support. The rehabilitation team was ranked as fifth supportive with informational types of support being given. Miller et al. (1989) concluded that the study raised questions about the quality and type of support provided by health care members and the effects on adjustment post MI.

McCauley (1995) reviewed the literature and discussed the negative effects of social isolation on survival of cardiac patients. She reported that sudden cardiac death is more prevalent in men with prior myocardial infarction (MI) who are socially isolated, and

increased mortality, in general, is related to social isolation and lack of support, especially among white men. These reports are congruent with O'Brien (1993), who also found that disability was more severe in both unmarried men and women.

Ostergren et al. (1991) followed 50 patients under 70 years of age who had their first MI. Using the Modified Alameda County Index of Social Network, and questions falling under the category of: (a) social participation, (b) social anchorage, (c) frequency of contact with family members, (d) emotional support, (e) informational support, and (f) material support, these authors were able to demonstrate positive correlations between social support and social network in predicting improvement in physical working capacity (per bicycle ergometry).

Meagher-Stewart (1994) compiled a literature review as an interpretive overview of the role of social support in recovery from cardiovascular illness. The aim of her research was to discover what is known to facilitate the life long rehabilitation and coping that a cardiac patient and spouse face. She began with an introduction describing the direct effect and buffering effect hypotheses. She noted that all studies in her review tested the buffering model of social support (see Appendix A).

Meagher-Stewart (1994) reported that five descriptive, exploratory studies all acknowledged the importance of the spousal role in the rehabilitative process: Not only is the spouse the main source of support during times of crisis or acute stress (just prior to surgery), the spouse (wife) also draws on support from the family to assist with coping. Wives' high stress during the eight-week post-myocardial infarction (post-MI) period was reported to be attributed to lack of support and information from health professionals

on the husband's condition and care. Meagher-Stewart noted that this portion of the review contributes to theory development of social support as a coping resource in illness recovery, particularly the life threatening MI. In her review of the literature, correlational studies also reported that wives who perceive more supportive behaviors by others cope more effectively with their husbands' MI event.

There were fewer interventional studies for Meagher-Stewart (1994) to report. Most were based on group teaching, or teaching and counseling with telephone follow-up. These studies reported a positive response to telephone follow-up, but the interventional studies were limited by small sample sizes. From these studies, Meagher-Stewart reported that telephone follow-up in the immediate post-hospital period promotes self-care activity and recovery.

From the literature review by Meagher-Stewart (1994), it can be concluded that there is a body of knowledge that defines social support as a coping resource in stress management and that social support needs change in the type, amount, and source over time depending on the individual's appraisal of the stressful event/environment. Secondly, social support can affect esteem, confidence, and role mastery of the cardiac patient and spouse. Studies on self-efficacy and self-esteem models were cited to support this theme.

The synopsis on Meagher-Stewart's (1994) literature review indicated many flaws in the reported studies. A most frequent problem seen in Meagher-Stewart's literature review as well as this literature review is the inconsistent conceptualization and operationalization of social support.

Summary

In the past decade, research has substantiated relationships of wellness and social support. The presented literature review has discussed the importance of examining clients' support needs and resources as relative to the situation, lending that certain types and sources, and perceived quality of social support are more important in different situations, like chronic illness or recovery from acute events. However, descriptions of health professionals as sources of social support remain inconsistent.

Exercise Compliance and Theories of Behavior Change

Aside from measuring physiological and quantitative outcomes (Ostergren et al., 1991), a majority of studies in the cardiac population have focused on determining factors that increase motivation in performing health behaviors. In terms of predicting behavior change, locus of control, self-efficacy, and health beliefs have received much support in the literature (Fleury, 1991b; Kison, 1992; Vidmar & Robinson, 1994). Even fear has been described as a motivating factor for compliance to health behaviors (Pender, 1996).

Radtke (1989) studied 28 post-MI patients discharged on a home exercise program to investigate the relationship of compliance and self-motivation. The Self-Motivation Inventory (SMI) by Radtke and the Exercise Compliance Questionnaire (ECQ) by Dishman, Ickes, & Morgan (1981) were used at 6 - 12 weeks post discharge. The study revealed parallel findings of previous studies of non-supervised cardiac rehabilitation patients. Radtke reported that patients tended to comply with a home exercise program in the early post-discharge phase but become less compliant with the passage of time.

Radtke concluded that different factors interplay when comparing the individual who complies short-term versus long-term. Exercise self-efficacy, a perceived ability to exercise successfully and a belief in the health value of exercise were suggested as possible variables influencing long-term compliance. Radtke recommended that similar studies use a larger sample.

Self-Efficacy

Using various exercise compliance questionnaires and self-efficacy measures, Vidmar & Robinson (1994) collected data from 169 individuals who had recently completed a formal Phase II cardiac rehabilitation program. Analysis showed a correlation between self-efficacy and exercise compliance. Also, a highly significant relationship was found between the exercise behavior measure and the measure of exercise barriers. The author concluded that self-efficacy may be more important in exercise compliance in the early phases of rehabilitation, but exercise barrier efficacy measures were found to be the most important predictor of exercise behavior.

The Health Belief Model

Guided by the Health Belief Model (HBM) (Becker, 1974) Kelly, Zyzanski, and Alemagno (1991) structured a study analyzing the outcomes and expected outcomes of a health promotion and lifestyle change program administered by a family practice office. The program was consisted of identification of lifestyle risk factors by questionnaire, physician prescription of lifestyle changes, and patient self-help instructional materials. Social support, beliefs, and self-efficacy were assessed in relation to motivation for change, or actual behavior change. The purpose was to identify which indicator (beliefs,

self-efficacy, social support) was related to motivation for change and in which areas (diet, smoking, seatbelt use, management of stress, exercise habits, alcohol use) the particular indicator correlated with motivation to change.

Secondarily, the study investigated which lifestyle behavioral changes could be predicted by high motivation for change. Kelly et al. (1991) reported two main findings. First, health beliefs and self-efficacy were notably related to motivation for change in most lifestyle areas. However, the authors noted the study showed a weak relationship of social support to efficacy expectations and related that this finding could be related to an artifact in the way social support was measured. Aside from beliefs, support, or efficacy, motivation for change in this study was clearly related to behavioral response to the health promotion intervention. Secondly, the authors concluded that the predictive value of motivation alone is strongest in straightforward behaviors such as seat belt use. On the other hand, support of family and others was related to efficacy expectations when the patient was in the at-risk status. According to these authors, the conclusions pointed to social support as a predictor that relates more to the nature of the intervention and the outcome measures used. For instance, if the intervention had been more involved and lengthy instead of relying on an individual's attempt to make changes by self alone, family support would have played a greater role in behavior change.

Health Promotion Model

Pender's (1996) review of studies testing the HPM, noted that interpersonal influences (social support) and behavioral factors were significant in predicting compliance in the cardiac population (p. 57). As for predicting exercise behavior,

exercise self-efficacy, barriers to exercise, interpersonal influences (includes social support), and health beliefs/values are the most significant variables (Pender, 1996). Pender relates that self-efficacy is influenced by other variables, including information and experience with performing the behavior. As such, Pender added prior related behavior to the revised HPM as an important factor in the motivation of many behaviors, in particular, exercise.

Summary

There are numerous theories that incorporate many constructs and variables in an attempt to describe the likelihood that health action/behaviors will occur. From the review of the literature, each is valid some of the time. Individual (health beliefs), situational, and environmental influences have been consistently reported as intervening variables in health behavior and motivation for change. Additionally, self-efficacy has emerged as an important predictor of health behavior and is influenced by such variables as information and experience with performing the behavior. An aggregation of these components of health behavior appear in Pender's (1996) Health Promotion Model. However, the HPM does not account for behavior in all situations. Pender noted that fear remains a motivator in specific conditions.

Motivation for Change and Social Support

There has been a proliferation of theories in the field of nursing describing motivation for change and the process of lifestyle change; the HPM is one example. Recently, studies investigating compliance to exercise have revealed influences of social support.

Theory of Empowering Potential

In an attempt to understand components of behavior and identify strategies used by individuals in the process of lifestyle change, Fleury (1991a) interviewed 18 males and 11 females (mean age = 56) involved in formal cardiac risk reduction programs. A group of 5 informants from a weight loss support group served as the comparison sample. All were high school graduates; 14 had some college education. Fifty percent were blue-collar professionals while 50% were white collar professionals. Constant comparative method of analytic induction was used to identify the grounded theory product of this study referred to as the motivational theory of empowering potential. Fleury describes this product as a nursing substantive theory of three successive motivational stages for initiating and sustaining cardiovascular health behavioral change.

Fleury (1991a) explains that motivation for change is a “continuous process of individual growth and development, ... in which the individual uses a variety of strategies to guide the initiation and maintenance of health-related change” (p. 288). The three stages of this process are readiness, changing, and integrating change. According to the model, imaging and social support are two categories occurring throughout this process which are interrelated to the three stages of change. Imaging refers to the individual representation of “valued ways of being as well as the creation of action statement based on those values” (p. 288). As described by Fleury, imaging directs the course of new behavior because it assists the individual to construct a set of standards for behavior and ways to judge performance; individuals visualize plans of action in relation to perceived ability, potential barriers, and past experience. In her study, social support

systems were perceived by subjects as “potential barriers in directing life change through their role in the creation and maintenance of boundaries” (p.288). Furthermore, supportive others attempted to protect the individual from harm, and decreased the sense of autonomy and responsibility in maintaining lifestyle change.

Social Support and Motivation in Cardiac Rehabilitation

In a separate article, Fleury (1991b) reported on the relationship between social support, health locus of control, health value orientations, and wellness motivation in cardiac rehabilitation. Recognizing that health beliefs, attitudes, and behaviors may be situation specific, an assumption of this study was that the individual would be more motivated to adhere to cardiovascular health behaviors if they valued the potential outcomes (benefits) of these behaviors. With a convenience sample of 52 post-MI patients, Fleury’s descriptive correlational study used the Norbeck Social Support Questionnaire (Norbeck, Lindsey, & Carrieri, 1983), Health Locus of Control Scale (HLC) (Cesarotti & Murdaugh, 1984), Self-Motivation Inventory (SMI) (Dishman, Ickes, and Morgan, 1980), and the Value Orientation Scale (VOS) (Murdaugh, 1982).

Additional questions inquired about risk related conditions for coronary artery disease and risk behaviors, like smoking and exercise behaviors.

In this sample, social support system variables showed no significant correlations between social support and wellness motivation. However, Fleury (1991b) reported that as values for family oriented goals increased, so did level of health behavior motivation. The belief in individual control (versus chance) correlated highest with wellness motivation. A positive correlation between the belief in provider control over health

outcomes and wellness motivation was noted, suggesting that provider and individual characteristics may interact to increase motivation in cardiovascular health behavior. Fleury suggested that support from the rehabilitation staff and recognition of the patient's potential to change his or risk profile may reduce the perception of chance as determining health outcomes. Fleury concluded that the nurse can enhance individual motivation through becoming aware of individual values in risk factor modification and consistently acknowledging and encouraging individual growth, self-discipline, and achievement in meeting risk reduction goals.

Melander (1990) surveyed 40 men and women who had completed 6 to 12 months of cardiac rehabilitation and examined social support and compliance to a medical regimen (medication, diet, exercise, smoking cessation). Compliance was measured by the cardiac version of the University of California of Los Angeles Social Support Inventory. Melander reported a reliability coefficient of .80 for this subject population.

Correlational analysis of the compliance subscales to social support led Melander (1990) to conclude that: (a) diet compliance occurred more frequently when accompanied by adequate support received from significant others, (b) medication adherence was achieved when emotional support was given and information pertaining to medication was sought, and (c) stress reduction was maintained when information was received concerning the diagnosis, and emotional support was satisfactory, as perceived by the patient. Finally, the author reported that none of the social support subscales contributed significantly to the variability of the compliance subscale scores of exercise and smoking cessation. Melander recommended that the study be repeated with a minimum of 130

subjects. Further recommendations urged the need for more studies that (a) address specific areas of compliance, (b) address sources and aspects of social support, and (c) further develop the social support concept.

Lifestyle Change in Cardiac Rehabilitation

Fleury, Kimbrell, and Kruszewski (1995) interviewed 13 women to obtain an understanding of intrinsic factors linked to motivation in cardiovascular risk reduction following an acute cardiac event. Using grounded theory analysis techniques, Fleury et al. describe a three-stage process of healing that “reflects a process of individual questioning, patterning, feedback, and repatterning” (p. 477) that assist the individual in attaching a personal meaning to the event (see Appendix B). According to this theory, changing behaviors begins with reevaluating self, seeking self, and accepting self while empowering others.

In another qualitative study, Frenn, Borgeson, Lee, and Simandl (1989) interviewed 10 male and female participants of a cardiac rehabilitation program. The product of their research describes a process of lifestyle change. This process of life-style change (Appendix C) includes precipitants to change and depicts processes of changing behavior by identifying forces and patterns influencing change. Rehabilitation program components, including relationships with staff and peers, exercise training, classes, and information, were described as having the potential to “enable” or “disable” lifestyle change.

Summary

In this portion of the review of the literature, many variables that enable or disable lifestyle change and health behavior are revealed. The potential negative effects of unbalanced social support were upheld. It becomes clearer that professionals must assess for barriers to health and healing, including appropriate social support.

Summary

As noted throughout the above literature reviews, two variables positively affecting outcomes in the cardiac population are exercise behavior and social support. Consistent, appropriate exercise has many times been shown to have an impact upon cardiac risk factors, while social support has more recently been shown to have positive effects on survival and quality of life. Research in the past two decades has also made progress toward naming the factors influencing and predicting compliance to exercise.

Knowledge (information), exercise barriers, exercise self-efficacy, and interpersonal (social) influences have emerged as the most significant predictors of compliance to exercise in the cardiac patient (Kelly, Zyanski, & Alemagno, 1991; Radtke, 1989; Vidmar & Robinson, 1994). Even more recently, researchers have begun to study the relationship of social support to compliance (Melandar, 1990).

Important insights and interventions that allow health promotion to occur can be deduced from the literature. First, one must assess the client's perception of his health and his health beliefs. Second, information, encouragement, and support (viz., emotional support, affirmation) are more important in some situations than in others, especially in those behaviors most difficult to change. Also, informational support and encouragement

are important needs that have been identified by cardiac rehabilitation participants.

Third, information and encouragement influence motivation, and motivation, according to wellness theory, influences readiness for change, enactment, and integration of change. Finally, exercise self-efficacy is the most significant predictor of exercise behavior.

Within the studies that investigated the relationship of compliance to wellness behaviors and perceived benefits/barriers to exercise, the same theme emanates: It is important for the health provider to assess potential barriers to health promotion, whether they be related to the perceived risk of health, lack of information, or lack of sufficient support.

Considering the limited number of studies examining the role of social support and professional support in facilitating behavior change related to risks and certain behaviors, and in light of the problem of exercise noncompliance, an area in need of further study is patients' perceived exercise self-efficacy and the role of social support in making behavior changes. No scientific studies reported investigating how the cardiac rehabilitation program attempts to assist clients in achieving long term exercise compliance. The above discussions on social support and relationships to exercise uphold designing studies that provide specific information about various types and sources of social support and the influences these types and sources have on exercise behavior for the cardiac client.

Research Questions

1. What is the nature and function of social support in cardiac rehabilitation programs?
 - Are health professionals perceived to be sources of social support by individuals in cardiac rehabilitation?
2. Which socially supportive aspects in cardiac rehabilitation influence continued participation and perceived exercise self-efficacy?
 - What are potential barriers to continued participation in cardiac rehabilitation and exercise self-efficacy?

CHAPTER III

METHODOLOGY

The purpose of this study was to describe the nature and function of social support in cardiac rehabilitation by exploring contextual dimensions of social support as perceived by male participants. Secondly, this study intended to ascertain if socially supportive aspects of cardiac rehabilitation were perceived to influence present exercise behavior and exercise self-efficacy.

The study methods were founded on a qualitative research design, whereby the researcher is the tool through which data are collected and interpreted. Data were collected by focus group interviewing and observation of group interaction. Using an emergent fit approach (Artinian, 1988) to qualitative study, the investigator expected to expand the concept of social support and to sustain or dispel the presented conceptual map proposing a relationship of social support in cardiac rehabilitation and exercise self-efficacy.

Subjects

The targeted population for this study was male cardiac clients who were currently participating in or had recently completed an outpatient cardiac rehabilitation program. To be included in this study, subjects must have completed their program within the past six months or be currently participating in a cardiac rehabilitation program (Phase II, III or IV) at least twice weekly.

Additional criteria included a diagnosis of coronary artery disease, chronic heart failure, cardiomyopathy, status post myocardial infarction, coronary angioplasty, or status post coronary artery bypass surgery. The participant must have been discharged from the hospital at least four weeks prior to the study, or six weeks if coronary artery bypass was performed. In addition, the study specified that the participant must be at least 18 years of age, speak English, read, and hear without an appliance. Written informed consent to participate was also required.

Procedures

Access to Subjects

This study was approved by the local institutional review board and Office of Research Integrity and Risk Protection at a large southeastern medical center. Approval was also given by two large medical centers, located in the southeast, with outpatient cardiac rehabilitation programs, using the respective institutional guidelines (see Appendix D). The researcher hand distributed recruitment flyers (see Appendix E) to potential research participants at the rehabilitation centers and posted a flyer and sign up sheet on the rehabilitation center's bulletin board and entry area. The flyer explained the purpose of the study, named exclusion criteria, and asked for consideration of participation in the study. The investigator's name, telephone number, and sponsoring institution was printed on the sign up sheet (see also Appendix E).

Method of Selection/Groups

The recruitment flyer instructed those desiring to participate or needing more information to provide their name and telephone number on the roster (sign up sheet).

The roster was posted beside the flyer as described above. Cardiac rehabilitation participants providing their name and telephone number were contacted by the researcher to confirm desire to volunteer. Written informed consent (see Appendix F) was obtained from the participants immediately prior to the group interview.

Participants for each group were recruited from their facility. In an attempt to establish homogeneity within each group, men under age 64 (or not retired) were targeted for one group, while retired or partially retired men who were over age 61 were targeted for the second group. Recruitment continued until 14 participants signed each roster. Participants were then contacted by phone to confirm eligibility and desire to participate. After two weeks, 26 eligible participants were confirmed. The final sample included 12 men for Group One and 8 for Group Two, as 6 men did not show for the interviews.

Setting

For convenience of the participants, group interviews were conducted at each group's cardiac rehabilitation center in a conference room and roundtable classroom. Both rehabilitation centers had similar goals, programs, and nursing protocols. These centers also specify participation and practice criteria: Each follow the South Carolina Cardiac Rehabilitation Association's protocols in developing program goals and practice guidelines.

Demographic Data

After signing an informed consent agreement, subjects were asked to complete a demographic form (see Appendix G) for the following information: marital status, age, race, range of income, education level and current or former occupation. Participants

were instructed not to place their names on the form and to place the form in the provided envelope.

Using a portion of the demographic data, socioeconomic status (SES) scores were calculated using Green's (1970) two-variable method based on educational level and income. SES indices presuppose that people in a given SES are influenced by their peers and social norms to behave in a certain way. Therefore, calculated SES indices use social norms to predict behavior, including preventive health behavior. For this study, individual SES indices, group SES indices, and an overall SES index were calculated.

Instrumentation

The researcher-as-interviewer and a structured interview guide were instruments for this study. Guided by the emergent fit mode of qualitative inquiry and the presented conceptual map, a two-part, 14-item structured interview guide (see Appendix H) was developed using a general to specific framework aimed at two main topics—social support within cardiac rehabilitation (Part I) and factors influencing exercise self-efficacy (Part II). An inductive to deductive design for each part reflected a continuum of discovery to verification. Initial, open-ended questions assisted in the discovery of the meaning of social support as perceived by the group members. Subsequent questions were designed to expand the concept of social support by promoting discussion of support during early recovery, support in deciding to participate in a cardiac rehabilitation program, and support for continued participation and present exercise behavior. Direct, closed-ended questions were aimed to deduce overall perceptions of social support within the cardiac rehabilitation setting and verify perceptions regarding

future exercise behavior. Development of the interview guide was supervised and reviewed by an expert nurse researcher.

For each group interview, the researcher (also the interviewer) stated the purpose of the study in general terms as follows: "We are here to discuss recovery after hospitalization and the role of cardiac rehabilitation in facilitating and supporting you in your recovery. For most questions, you will be able to answer in turn, one after another." The interviews were audio recorded.

The last portion of the group interviews focused on research question 2. Does social support in cardiac rehabilitation influence perceived exercise self-efficacy? The intent of this portion of the interviews was to summarize earlier discussions of participants' perceptions and experiences. Many of these questions were answered earlier when participants shared their view of important aspects of the rehabilitation program. The one-time interviews lasted approximately one hour and fifteen minutes for each group.

Content Analysis

Transcripts of audio taped interviews about the perceptions of social support within cardiac rehabilitation were the primary unit of analysis. Perception of the impact of cardiac rehabilitation on exercise self-efficacy was the second unit of analysis. Further, the perceptions were analyzed across groups and within groups.

Preparation for analysis began by transcribing the audio recorded interviews without editing. Codes were used to signify different voices or responses from different individuals. First initials were used when another participant's name was recorded. Other recorded names (e.g., names of professional staff) were changed during

transcription. Typed transcripts were examined by content analysis. Steps used in the analysis are presented in Table 1.

Because the concept social support has been previously defined with variables such as family, friends, and neighbors, a pure naturalistic-inductive analysis of the qualitative data was not necessary, that is, the basic social process of social support and health behaviors has been previously explored. Consequently, certain categories were anticipated to unfold but discovery of inductively emerging patterns and categories was expected. In keeping with the study design and format of the interview guide, analysis of the data included both inductive and deductive approaches.

Table 1. Content Analysis

Steps
1. Within each interview transcription, key words/phrases and responses directly relating to the interview questions were highlighted and counted.
2. Transcriptions were read numerous times until broad categories, or labels describing the content could be identified.
3. Nine general categories were identified; each category was titled and assigned a label and code.
4. All content (i.e., each phrase, response, or paragraph) of the transcriptions were matched (coded) to the label describing the content.
5. All labeled content was indexed according to label title. Technically, all labeled content was copied and pasted onto separate indexed (labeled) documents.
6. Themes were derived from repeated review of the indexed (labeled) content.
7. Secondary analysis consisted of reviewing categorical content for sub-themes.
8. All themes and sub-themes were refined during the secondary analysis.

Although most content codes were chosen by the corresponding interview question topics, the data were analyzed by both inductive and deductive approaches. Data generated from deductive analysis were used to evaluate the proposed relationship (cf., contextual map) of social support in cardiac rehabilitation and exercise self-efficacy with the real-world findings.

Data Credibility and Validity

The credibility of the data was enhanced in several ways. First, interviews were conducted by only one researcher and were taped and transcribed without editing. Second, the content analysis was supplemented with observational notes and anecdotal information. Third, following responses to interview questions, participants were asked to state their thoughts and feelings regarding their response. The researcher then incorporated participant's own words when restating responses for clarification and verification of perceptions, views, opinions, and feelings. Lastly, members of the researcher's thesis committee reviewed the analysis procedures, findings, and conclusions for validity. Likewise, a second thesis committee member recalculated SES scores to ensure correctness.

Summary

This chapter focused on the methodology developed for this study. The rationale for the qualitative design of the study was explained in terms of expanding the concepts within the stated theoretical foundation. Criteria for subject inclusion were identified and procedures for implementing the study were described. The structured focus group questioning format and analysis procedures were presented.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

This qualitative research study was designed to expand the dimensions of the concept of social support in health promotion. The primary aim of this study was to explore social support within the context of outpatient cardiac rehabilitation. The secondary aim was to identify social support mechanisms within cardiac rehabilitation influencing continued participation and exercise self-efficacy among the 19 men who participated.

Sample

The male subjects were predominately Caucasian: Within Group One, 10 of 11 participants (91%) were Caucasian. All eight members of Group Two were Caucasian. Ages for the entire sample ranged from 36 to 89. Within Group One, 10 of 11 participants (91%) were under age 60 ($M = 51$, range 36 - 63) while all in Group Two were older than 60 ($M = 71.7$, range 61 - 89). (One participant in Group One did not report his age, marital status, income or education level; the remainder of demographic data reflects 10 participants for Group One, 8 for Group Two.) Only 1 participant from Group One was "not married"; 2 gentlemen in Group Two were widowed. In Group One, 9 participants (82%) were currently employed, whereas half in Group Two had fully retired; the remainder of Group Two worked at least part-time. Participants' educational level was at least 12 years and the most frequently reported annual income level was \$25,000 - \$49,000 ($n = 6$). However, 10 subjects reported incomes of at least \$50,000.

Table 2. Demographic Data

		Group One (n=10)	Group Two (n=8)
Age	30-40	2	0
	42-50	3	0
	51-60	4	0
	61-65	1	2
	66-70	0	3
	71-80	0	2
	81-90	0	1
Marital Status	Married	9	6
	Widowed	0	2
	Single	1	0
Education	< 12 years	0	0
	12-14 years	5	6
	15-16 years	4	2
	16 years >	1	0
Household Income	\$15,000 - \$24,000	1	1
	\$25,000 - \$49,000	3	3
	\$50,000 - \$74,000	3	2
	\$75,000 >	3	2

The most frequently reported event among both groups was coronary artery bypass surgery (CABG; $n = 11$), followed by percutaneous coronary angioplasty (PTCA); $n = 6$) and myocardial infarction (MI; $n = 4$). In Group One, two participants reported all three events while one member reported an angioplasty and myocardial infarction.

Another member from Group One reported receiving a permanent pacemaker after bypass surgery. A participant from Group Two reported no procedural events with the diagnosis of coronary artery disease.

Table 3. Diagnoses

	Group One (n=10)	Group Two (n=8)
CAD only	1	1
CAD/CABG only	4	5
CAD/PTCA only	1	2
CAD/MI only	1	0
MI/PTCA only	1	0

Most participants were currently enrolled and attending cardiac rehabilitation three times weekly. At the time of the interviews, two participants from Group One had just completed 36 visits for completion of their 12 week program; one graduated six months previously, the other had graduated one week prior to the interview. Others had participated between three and 11 weeks at the time of the interview. From Group Two, all participants had participated at least six weeks with two members currently participating in a cardiac rehabilitation maintenance program at their center.

Socioeconomic Scores

Considering the relationship of social norms and socioeconomic status (SES), socioeconomic scores may predict preventive health behavior (Green, 1970). For this study, education and income level were incorporated into Green's formulas for

calculation of SES scores. The scores 71.89 and 69.43 were obtained for each group, respectively. The overall score for the entire sample was 71.2.

Interview Data

The early portion of Part One of the interview aimed to assist the groups in identifying general perceptions and examples of social support prior to the rehabilitation experience. Thus, beginning questions were broad and general and included several probes and cues to assist the group in defining social support. Transitional questions narrowed the topic and directly elicited participants' perceptions of social support within the cardiac rehabilitation setting. Direct inquiry was used to elicit specific examples of social support within cardiac rehabilitation, verify responses, and explore any differing perceptions among group members. For example, after a discussion of social support in cardiac rehabilitation, participants were asked if they perceived professional staff as sources of social support.

Part Two of the interviews evolved into discussions of the driving forces of continued participation in cardiac rehabilitation. Open ended questions and probes propelled participants to reflect on the illness/recovery experience. The interview concluded with direct questions in order to clarify participants' beliefs about future exercise and perceptions of the cardiac rehabilitation program's influence on these beliefs.

For the purpose of presenting transcribed data, categories (resulting from analysis of the data) were collapsed to yield a few, broad categories. These categories are:

(a) Exploring Perceptions of Social Support, (b) Professional Support in Cardiac Rehabilitation, (c) Peer Support in Cardiac Rehabilitation, (d) Anticipating Long-term

Exercise and Adjustment, and (e) Other Benefits of Cardiac Rehabilitation. For some categories, content from each group interview is presented in turn. Next, themes are presented according to the researcher's interpretation and answer to the question "What messages, propositions, or assumptions do the data impart?"

Exploring Perceptions of Social Support

Initially, each group discussed its views and general perceptions of social support by responding to the question "What does social support mean to you?" Participants provided examples of support while hospitalized and during the pre- and post-surgical period. During this early stage in the interviews, a few group members readily alluded to the supportive force of group participation and the cardiac rehabilitation staff. As one member replied "Peer support, like this setting here." Others responded with examples of sources and types of social support: "Counselors." "Financial Assistance." To establish personal meanings and significance of social support, the interviews were directed to a discussion of examples of social support during hospitalization and early recovery.

Participants readily stated family, friends, and companions when exploring the meaning of social support: "I think family, is probably your primary. And friends." Others in the group agreed: "Your family is your best." "Friends." Several participants described how their wives were a source of support while in the hospital. As one gentleman stated "She (wife) was the gateway to the outside world, [she] let me know what was going on in the rest of the world—how the house was, and so on." A gentleman without the support of a wife described the support of his significant other:

“She invites me to supper sometimes, and I take her to a movie. So [I] have a companion, and it helps, it helps.”

Participants described neighbors and church members as “being concerned”: “I think you will find that your fellow members in your church will come together quite a bit to help you.” Others discussed the importance of the church and other organizations as social links: “I think church is a big a thing, it’s the most socializing I do at this point.” Others agreed: “I was thinking about the same thing, ah, the church, family, fraternal organizations.” Others gave specific examples of assistance and support from neighbors.

Additionally, participants consistently stated employers as sources of social support. One gentleman stated, “ [They’re] a tremendous help—in most cases. Some may not care if you come back, but most do. They’re willing to help you.” All agreed.

Participants also described sources of support as “people who work in the doctor’s office, and hospital.” One gentleman added: “[I] didn’t have any idea what was going on. You know, information is a good thing when you are in this situation.” “The dieticians were there too, ... and said ‘How is the food?’ ... that was support because she came [back] and followed up.” Staff nurses were cited as facilitating relief of fear: “[The nurse] walked us through open heart surgery. She took us up to the intensive care, ... we saw the endotracheal tubes, the plasma, ... it took a lot of fear out.” For this gentleman, the professional staff was supportive following surgery also: “They get you over that initial couple of days where you think the world is coming to an end.”

Others recalled support being offered following surgery: “Well I think the hospital has a program called the Mended Hearts. They came [to the hospital] and checked on me

and gave me some information about their program, ... about how they could support and help me afterwards ... [they were] people who [had] had the same kind of operations.” Friends were also important sources of support during this early period: “I did have a couple of friends to come and baby-sit me just so she (wife) could get out and go to lunch, ... Two of the fellows that did that were former cardiac patients, who were very supportive ... they shared their experiences with me.”

Professional Support in Cardiac Rehabilitation

As discussions of social support and recovery progressed, the researcher narrowed the topic to *professional support in cardiac rehabilitation*. Participants stated that the rehabilitation nurses visited them and told them about the program and available financial support. For those participants who did not readily decide to enter a program, wife and family urging to enter rehabilitation was the number one reason for finally deciding to “make an appointment.” Information about financial aid through the state’s vocational rehabilitation program was a deciding factor for one gentleman: “I had no idea what [vocational rehab] [does] or how it worked or [how it could] support me. I [didn’t] know if I could afford to pay for all of this.”

Participants readily discussed the anxieties of the initial visit to the program. Specifically, both groups recalled experiences of how the “staff assisted [them] to overcome some anxieties” and continue in the program. One gentlemen began “They welcomed me in a very friendly manner; [they] get you motivated real quick.” Others agreed: “One of the first things they did was introduce me to people ... you hate to walk around here for 10 minutes around a bunch of people in an environment like this and not

know their names—you [would] feel left out. They get right there and they overcome all of that.”

The group communicated that they had trust in the people guiding them through the program: “Well, they make sure that you’re not over-doing it, especially if you’re first starting the program. They kind of guide you in every little thing. [They] get you going gradually and they’re always with you. Other stated: “From start to finish, [they get] you on the right track, keep you on the right track, and monitor you all the way. I was stopped because I was on the treadmill and my heart rate went way up. The girl that stopped me was way across the room but she spotted it on the screen. And I think that’s a real satisfaction in coming [to] this program because you certainly realize that somebody is keeping an eye on you.” Another gentleman responded “When I come in for my exercise, [they] question me: ‘Are you getting enough fluid? Are you getting enough of this, of that, ... ?’ They’re very concerned.” Others related: “I think because you put your trust in the staff and what they’re doing [when] they tell you ‘We’re going to increase the [work]load,’ ah, it makes you realize that they know you can do [it]. So, it behooves you to achieve that goal, whether it [is] an extra 2 - 3 minutes on the treadmill, the bike, or whatever.” The statements continued: “They set the target for you and you have to accept that, and do it. And so I think, mentally, it gets you over ‘I’m going to fall apart’, or whatever you want to call it; it gets you over that hurdle. So you really do look forward to coming in here [because] it is supervised.”

Others who communicated perceptions of professionalism emphasized the “cheerfulness” and “attitudes” of the staff: “I think the attitude of the staff here, their

ability to work together well [is] so important for a patient ...” Others added: “And they’re always cheerful and always have a smile on their face [and] a good word.” “I think that means so much; ... a good sense of humor can be key.”

Many shared accounts of personal experience: “The first day I came [in] my blood pressure was up and they called my doctor. [They] sent me straight back to him. They really care about you.” “After I came in I had an irregular heart beat. They just picked up the phone and called the doctor and sent me over there (pointing to the hospital). They called at home two or three times while I was in the hospital.” Another participant related “I think about J.W. in our class, J.W. has some other problems—and they were concerned about him. They even called the doctor once or twice to check if it was OK for him to exercise, what [he] could do and things like that. I think they care about you—on a personal matter.” Another accounts: “What impressed me was—right after I started, I had to knock off rehab and have another surgical procedure. So, it took from January ‘til June to start rehab. [Between] the time I checked in and came back, they called me a couple of times a week to see how I was doing, and I thought that was pretty nice of them. Another gentleman told this story: “Yeah we had a lady in our group who didn’t feel right, and they put an EKG on her in the conference room. She was admitted that day. I know that at least two [of the nurses] visited her everyday either before they came on duty or during their break time—because they told us how she was doing. I think that was above and beyond the call of duty.”

When others related similar experiences. The researcher asked “What type of support is this?” The replies were from both groups were: “Encouragement.” “Emotional

support.” Others stated: “Good [for the] morale.” The rest of the group agreed: “Yeah, if you didn’t show up you better [had] let [them] know it [or] they would try and get a hold of you or track you down.” “They [are] concerned.”

Participants perceived coming to their rehabilitation appointments as an enjoyable time in their day as opposed to an assigned task to complete: “The way I look at it is, it’s not regimented, [I mean,] it’s not a regiment. And they come over and talk to you about, ah, and say ‘How’s [your wife] getting along’, and, ‘how’s the kids?’”

For many, receiving information made a difference in their recovery. One gentleman said that the program taught him that he “had a disease” for life, that he was not “fixed.” The discussion continued: “One thing I enjoy about the program is [that] they teach about the food you’re supposed to eat—and not eat. And also, the other part of the program, ...” The group helped him with the answer: “The stress [class], and tension.” The gentleman continued: “Yes.” Others stated: “Those little classes just before the exercises too.” “Yeah, the stretch class.” “It helps a lot.” Another gentleman stated the “education part—[is] really helpful.”

The subject of stress management, depression, and coping surfaced when the group was asked “Does the staff ask whether your social support needs are being met?” Here is a synopsis of the replies: “We were given a survey [that] talked about what your general state of health, ... what kind of medicine you take, [and] your mental health. It asks if you’re depressed or stages that you are, or if you have any questions about your health.” This gentleman went on to recall the many questions he had when entering the program: “You’re not sure what’s typical. I worried about [the stability of] my chest.” When the

researcher asked “How did you feel about being asked those questions about depression?” The first reply was “I didn’t want to admit that I was really depressed—or scared.” He went on to say “[They] had to [ask], and I [knew] I had to feel myself out, but, I didn’t want to admit [it] to anybody.” Others stated that “the classes on depression helped, too.” One gentleman acknowledged: “I knew then that they’re looking [for depression]. It made me think ‘Well maybe I wasn’t depressed, but maybe they’re looking for people who are [depressed] and [want] to help them.’” Group members acknowledged that they had the same thoughts: “So I think that they’re trying to help us recognize ‘Are we in that group? Do we see somebody else in that group?’” Another gentleman whom the researcher had observed being told to “take it easy and warm up slowly” acknowledged that he “sometimes takes his work stress out on the machines” but that he “feels better” when he completes his exercise session.

Participants were asked if the staff assisted in helping them identify and deal with possible barriers to following the recommended lifestyle changes and planning for future exercise. The group admitted “apathy” and “mind-set” as potential barriers: “I think you have to get the mind-set because, after a while, you feel OK. You start [thinking] ‘I’m not going to do it today’ and you skip two days, and pretty soon you’re not doing it anymore.” Another stated “I think the program teaches you what you must do and not do. And then you make up your mind that’s what you’re going to do.” “I think that without some support, pretty soon—and if you feel OK—you would slowly drift right back and be right where you were before and start cheating.”

For others, another incentive for exercising was fear of declining health in the future: “You get on those machines and can you do it—cause you’re scared as everything ...” However, the staff were cited as helping them feel safe: “[The nurse] got on to me, she said ‘You have to push a little harder’. She says ‘Your heart ain’t beating any faster than when you came in here.’”

Next, participants were asked “What is the most important source of social support in this program?” Two or three voices replied “The rehab nurses.” The rest of the group nodded in agreement. The group gave the following explanations: “I think that what they’re trying to do is to come up with the answer [to] ‘Are these [sessions] effective.’ And maybe, just by bringing [the topic of depression] out it gets you to admit [that you need support].” Another gentleman stated “That’s the hardest thing to do—admit that you need support.” Others followed: “That’s right.”

At the end of the interviews, participants were asked to describe how they felt about the following statement: “Professional support does not constitute social support.” The replies from Group One were: “I don’t think you can split the two. I think you have to have the compassion that goes along with [being a health professional], or whatever you call it. Then, everybody gets the feeling that there is concern on their part and not just a, you know, come down here and spend an hour and a half and ‘you’re going to do this, this, and this.’ I think that they really [care] ...” Others stated “I think that it’s the combination of both.” “They instill in us that we need to keep on doing it.”

When Group Two was asked the same (How do you feel about the statement, “Professional support does not constitute social support?”), one gentleman precariously

replied: "Well, that sounds right. Because, ah, professionally, they're here for that [service]. They're not here for social support." The remainder of the group quickly rebutted: "Well I think it depends on the professionals. You got professional out here, they also give social support." The gentleman making the first statement answered, "Well, I mean that goes with it." Then another gentleman added: "But, I know what you [were] talking about (looking at the first gentleman). You're talking about—it's cut and dry between family and friends." Others joined in the conversation: "They better know what they're doing otherwise they shouldn't be there, but once they're there, they're very pleasant. And they do provide [social support]—I think pleasantness is socially supportive." Many voices: "Yes." "That's right." "Absolutely." Others made their statements: "They really add a little personal involvement other than the basic question 'How hard are you working?'" They make you feel as though they are concerned, personally, about how you're doing right there. I think we all feel that way." All others agreed by stating "I think they're too hard too separate."

Peer Support in Cardiac Rehabilitation

During analysis, the following content was indexed under the general category label *Peer Support*. The groups were prompted by the question: "Are there other aspects of social support in the program?"

Peer support: group one. The discussion in Group One began with the responses: "Each other." "Everybody, ah, all of us sitting around here in this room went through some part of the same thing. And you talk to each other and encourage each other, and challenge each other. That's a lot. And you kind of look forward to coming. I enjoy

being part of the class and I look forward to coming. You kind of work with each other.”

Others: “I agree with that.” The researcher noticed that several members of a morning exercise group were present while most other group members were participants in the afternoon session. The interviewer inquired about the difference in the numbers and one gentleman replied: “Four people is all we got in that early morning class. I think you get more attention with a smaller class,...from everybody. You know everybody [and] can joke with them.” The entire group agreed that up to 12 members per exercise group “was a good number.”

Situational factors were incorporated into the discussion of peer support: “I think we, [I mean] I, had to figure out what was normal at the beginning of this course. You know P.T. was ahead of me and I asked him stuff. For example, if he had [the] problems [I had] when he first started. I had a million questions to ask—from being scared.”

Other participants explained other ways that peers and the context of the exercise environment could be supportive: One gentleman acknowledged how the progress of another is a motivating force to continue in the program: “He was running on the treadmill; I [had been here] only four weeks. And it motivates everybody else. I’m sure someone was looking at me when I finally graduated—what I was doing. We’re all watching. I mean, I was watching the one next to leave, to see if I was going to reach that stage. And the support I got out there is what did it.” Others followed: “It never ends, you know. You’re either here or somewhere else. I want to see the end of this [program].” “I think knowing what’s going to happen if you don’t do it keeps you doing

it.” Others nodded in agreement while one gentleman stated “You got to be motivated or you die, ... you got to do it.”

Group One answered peer support as being the most significant source of motivation in relation to continued exercise : “I think the hardest part is when we finish this program we have to leave the people that kept us coming. You can always come back and visit, remembering how we started, remembering how we progressed all the way through it, and then we walk out of the door ...” “Not only that, you know you have to be here three times a week. I don’t know, once I graduate from this program, where I’ll go. I won’t have to come here anymore; you know, you [may] feel like you’re not going to do anymore exercise. That kind of worries me. This way, I know I have to be here three times a week ...” P.T. and I talked earlier, [and] when we graduate, we will go upstairs (to the health club in the same building) and continue our exercise.” “You don’t like to miss it.” “It makes you like, you have to be here three times a week. I mean, it seems like it’s a must.” “Yes, like not showing up for work or something.”

Peer support in this context was summed up as group support: “We all have something in common. Up there (the health club) you have everything from teenagers to older people to heart people to people with everything. People who come here (rehabilitation) all have a common denominator. And I think they (other graduates) would come, ah, if it stayed open to seven [p.m] at night or something like that ...” “Doing it at home is not like doing it here. You get out there and walk up there and come back and you’re through with it. You don’t want to do nothing. Out here, you’re ready to go—with the machines—you know everybody up here—you want to out do him

(pointing), or you want to see what he's doing and you want to out do him—but not hurt yourself. And we do that.” Others stated: “Challenge. Challenge.” “We lie to each other and [say] we are doing 6.2 [miles per hour]—or we're on [level] three.”

Peer support: group two. Recall the first question of the interview “What does social support mean to you; can you provide examples of social support?” A member of Group Two answered “I think, once you get over the initial couple of visits, the interaction with your fellow students is important.”

When the discussion was steered back to the topic of peer support, the following discussion ensued: “I had mentioned that earlier that it's the interaction among the group. We might not know each other's name's, but you know, you see each other Monday, Wednesday, and Friday ...” “I just wanted to say that the fact that, you know, you say hello to each other and it's good to know [your peers] are here.” “It's uncanny how quickly you miss one person that hasn't shown up in a couple of days. For example, you [would] hear it all over the room that J.B.'s not [been] there for a couple of days. You're taking roll call every time you go in; that's peer pressure.”

The researcher asked others in the group about the sources of motivation for continued future exercise and continued program participation: “Ego.” “Sure, we all got it.” Others: “Sure.” “That's what we live off of, peer pressure, you know, that's where that comes from.” The researcher asked if they competed with each other: “Oh yes.” But one gentlemen replied: “I haven't seen that—ah, noticed this.” Another replied “I do.”

Anticipating Future Exercise and Adjustment

As participants became comfortable with the discussions of social support and peer support, they began to share perspectives on the experience of healing (adjusting) and adaptation to lifestyle changes. In essence, participants were able to explore other sources of motivation to continue in cardiac rehabilitation and plan for long-term changes.

Participants discussed the significance of the classes on stress management and grieving: "It helps you figure out how you got here to begin with. Cause I know myself, I felt fine, and all of a sudden, I had a heart attack." "I was 37 years old and was in a coma and so I want to learn what you can do to prevent it. "I was kind of leery about coming [because] I felt the same way you did (pointing to another). When I first heard about the program, I thought we should [just] walk. And [when] they told me how many sessions, I thought 'Gaah, that's half a year'. But when you think that you're trying to change your life ..." Another gentleman began: "At times I was depressed with the sores that I still had, to the questions in my mind—if I'm going to have another one. Especially when you walk out there, and you walk over there and see the crash cart sitting there. I think the other reality is that the crash cart is out there for a reason. And we're all in here because of heart problems. So, I think that's where it was grounded. I had to do myself. I was at bottom, I had to figure out all of these questions ..." I had [to] ask everybody questions [like] 'What happened to you? Are you at this same stage? Did you have the same things that I'm having right now?'"

The discussion continued: "That's the hardest part—coming in here and being scared." "Well, when you've had to have a quadruple by-pass and you have two other veins/arteries that were done at the same time and you know that you could be back in surgery in six months, five years, ten years, ah, you never know how long it's going to last. That's the other thing that you ask. You wonder if you'll be in here for a second time." "I look at that crash cart out there two ways: I'm glad it's there, but on the other hand [it makes me ask myself], are you really ready for the class if they think you might have to use it?" "It's motivation." "Just like P.T. said, he says he thinks about stress, and you keep coming and you just keep working on this part of your life until you can bring [about] a change, but if it (the program) was shorter, it wouldn't make the impression that it should." Another gentleman stated "My motivation is my red badge of courage (pointing to chest). You cross your legs and show your war marks. It makes me know that I don't want that to happen again." Another concluded "You remember the zipper."

When the group was asked if they believed they would be successful in continuing to exercise they all nodded or said "Yes." The group was then asked: "Who or what has had the greatest influence in helping you form that belief? The answers were: "Me." Others answered the "caring staff." The discussion ended with the question: "Has there been any other aspects of the program that have made you think that you can do it?" The last two replies were: "It would have to be all of these girls out here helping us, you know, with the exercises. They instill in us that we need to keep on doing it." "I think

knowing what's going to happen keeps you doing it—if you don't do it." Others nodded in agreement and said: "You got to do it."

Group One suggested program improvements that could serve to reduce the barriers to future exercise. Most wanted to plan to exercise with their wife after graduation and hoped that their center would offer a maintenance program. One gentleman stated that he believed the group shared a consensus about wanting to participate in a maintenance program: "Just listening to [other] people talk it sounds like they have the same idea I do. The researcher asked the group "Why do you think this is so?" The reply included the desire to exercise with peers who share a common purpose.

Group Two. As the interviews progressed to the discussion of exercise and continued participation in cardiac rehabilitation, Group Two was asked: "What was the incentive that made you continue in the program after those first few weeks? The replies were: "Scared." "Apprehension." "I think you want to return to your normal lifestyle as quickly as possible—[a] healthy lifestyle, ... you realize that this is the way to do it, [or] your doctor wouldn't be recommending it." Another stated: "It's the first time in twelve years that I've had a place to be other than the first tee on the golf course. So I'm getting used to it." Others stated that having an obligation to be somewhere helped them to develop discipline: "I think that most of us, when we signed up, committed ourselves to it; we had an appointment on Monday, Wednesday, and Friday—three days a week." Others stated: "It's a commitment you make." One gentleman in the long term cardiac rehabilitation program (maintenance phase) stated: "I don't know if I would do it if I [had to] do it by myself ..."

Group Two also acknowledged the physical benefits of exercise. An older gentleman stated: "This inducement—it's just wonderful." Others agreed that they felt better and enjoyed compliments from others: "It strengthens you muscularly, and makes you feel better so you want to do more—and you look forward to it." "I feel 100% better when I'm finished than when I started." "One of the real incentives [for] me has been, and I think this happens to most human beings—you enjoy the compliments of somebody telling you—'you lost 40 lbs. and you're looking good,' or, 'You're doing a lot more.'"

As the discussion continued the group (Group Two) was asked if they believed they would continue in the long term program or continue to exercise after graduating from the 12-week program. All answered or nodded "Yes." The group was then asked "Who or what was the most significant reason for this belief?" One gentleman stated: "I think one of the incentives [to continue], other than one of the obvious ones is to stay alive as long as possible; another incentive is to avoid what some of the people here have gone through. I consider myself fortunate—I haven't had an operation, I had an early warning. I would be foolish not to follow the advice and continue to exercise and do everything in my power to avoid surgery."

Others in Group Two mentioned that their wife or son (family) "would make sure they're" attending the program. The remainder of the discussion follows: "In my household, I will not broach the subject of stopping." My wife and son say [to me] 'Yeah you're going'. "You know, it really wasn't all that bad for me [but my wife] went through a lot more than I did. So when they say 'Go; or please go', I don't think you have a choice."

Other reiterated how they liked “having a place to go,” and describe coming to the rehabilitation center to exercise as “addictive,” or, “a lot of fun.” Others added: “You get to where you look forward to it.” “You enjoy it.”

Other Benefits of Cardiac Rehabilitation

Attending the cardiac rehabilitation program continuing with regular exercise resulted in benefits other than increasing physical capacity. After a discussion of experiencing the physical benefits of regular exercising, participants were asked if exercise had become a habit for them. Most answered yes while others who were newer to the program stated “I’m getting there.” These statements were supported with the following: “Sometimes I walk twice a week ... even on my days off I walk about a mile and a half [or] two miles.” For many, “having a place to exercise” as opposed to exercising at home was important. One gentleman described how cardiac rehabilitation had enhanced his recovery: “At home, your wife tends to be overly concerned to the point of ‘Don’t pick that up, I’ll do it for you’. In fact, I would go home and say, ‘You know they increased my weights today.’ She [would] say ‘Don’t you think you’re doing too much?’ But I was feeling better—mentally. I had terrible waves of depression every now and again—they were getting further apart. So something was working, and I wanted to go with the mainstream of getting out of [the depression].” This same individual stated that his family’s experience with his cardiac illness and recovery gave them “a lot of wisdom.” He asserted that the two family businesses were brought “closer together.”

Another gentleman gives his testimony: “If you have a friend or close relative, who is one of the slackers, question them about their health. You’ll find out they are not

doing as well as I'm doing. Some of them are younger than me, too. But physically they just don't have it. I know it's working!"

Several of the participants gave accounts of offering their support to others much in the same way families and friends had supported them: "I have a neighbor, she lives across the street from me, she just had by-pass surgery a couple of weeks ago, and she's pretty much by herself so we went to see her yesterday. And she was grateful because I could answer some of the questions that she had." Another gentleman recalled: "I think by my heart attack I may have influenced maybe 50 people to be more conscious about what they eat, the need to exercise ... I try to pass that on because [the staff] helped me ..."

Analysis

The Health Promotion Model (Pender, 1986) was used as a framework for identifying categories and expanding themes through sub-themes. Following labeling and indexing of all content, categories were reviewed and collapsed into broader categories (as presented above). During analysis, critical incidents, variables, and themes related to social support and exercise behavior were identified. Data analysis revealed the dimensions and processes of social support that are important in the context of a cardiac rehabilitation program. Specific findings include the interpersonal and situational factors that influenced individuals' (a) decisions to participate and continue in cardiac rehabilitation, (b) development of a new self-concept and self-acceptance, and (c) adherence to exercise prescriptions. The processes of adjusting to lifestyle changes and healing following a cardiac event were evident and reported as secondary findings.

General Themes

Considering the primary unit of analysis as perceptions of social support within cardiac rehabilitation and perceived influences on participation and exercise, the major themes are presented in Table 4.

Table 4. Major Findings

Themes
1. Both family support (norms, expectations of significant others) and professional support (encouragement and information) were important in facilitating the client's decision to begin rehabilitation.
2. Professional support is perceived by the study participants as social support when expert and compassionate care is delivered. Social support is perceived through trust in the professional and the program: Participants perceived social support when professionals communicate an interest and concern in their total health and recovery and provide valuable health information through education, feedback, and encouragement. Validating progress, providing guidance, recognizing concerns and fears/insecurities, and approaching each person as an individual is viewed as social support.
3. The context of these cardiac rehabilitation settings influences behaviors and thought processes (activity-related feedback), through environmental cues and situational influences which increased participants' motivation to exercise.
4. Perceiving positive experiences associated with exercise (viz., benefits of exercise) motivated these individuals to continue exercising. Continued participation provided for activity-related feedback.
5. Emotional support, encouragement, modeling, and perceived expectations (norms and peer pressure) were motivating factors influencing participants' decision continue in the program.
6. Fear and anxiety are motivating factors arousing emotional responses and influencing participation and exercise self-efficacy in the study subjects.
7. Peer support increases as an individual progresses in the program and nears Phase III (maintenance phase) and is very important in continuing in program and planning for long term strategies to continue exercise behaviors. Peer support influences regular program participation leading to "establishing a habit with exercise" and increased exercise self-efficacy.

Sub-Themes

Guided by the knowledge presented in the literature review addressing social support and theories substantiating processes of lifestyle change and adaptation following a cardiac event (Fleury et al., 1991a; Frenn et al., 1989), further analysis of the data supports the following sub-themes as secondary findings.

Table 5. Secondary Analysis

Sub-Themes
1. Family (wife and/or children) is perceived as the most important source of support, especially in the acute illness phase, during "relapses." Church and neighbors lend tremendous support during this time as well.
2. Participants who have graduated or are near completion of the program perceive that the program has benefits other than "physical recovery" (benefits of exercise): Most reported experiencing spiritual growth and increased family functioning (cohesion and communication) as a result of attaining a positive perspective and by experiencing opportunities to contribute to others within the program or community (in much the same way as the staff functioned to promote their health: validation of normal responses, encouragement to others, setting the example, teaching others about the benefits of exercise).
3. Perceptions of social support influences coping and adaptation in all stages of recovery.
4. As participants progress in the program, acceptance of self, or a new definition of self emerged which helped participants find meaning in their experience.

Summary

This chapter presented the demographic and qualitative data obtained from two (male) focus group interviews exploring social support in cardiac rehabilitation. These interviews sought to: (a) identify whether these participants perceived professionals as sources of social support, (b) identify potential barriers to exercise, and (c) identify supportive forces that motivated participants to remain in cardiac rehabilitation and plan

for long term exercise. Following presentation of the data, themes and sub-themes, the products of content analysis, concluded this chapter.

CHAPTER V

DISCUSSION

This chapter discusses major findings of this study in the context of the literature and the presented theoretical foundation. Limitations of the study are considered while implications are presented. Recommendations for further study conclude this thesis. To address the presented research questions, the following sections discuss perceived sources of social support in cardiac rehabilitation and the influence these perceptions and other contextual factors have on current and future exercise behavior of the study participants.

Major Findings

The main objective in this study was to explore the perceptions of social support in cardiac rehabilitation and the supportive forces influencing participants' beliefs of successfully complying with prescriptions of exercise. This section discusses sources of social support within cardiac rehabilitation and explores how these and other factors influence participation and maintenance of exercise as perceived by the study subjects: Participants in each focus group perceived professional support, the physical setting and climate, and peer influences as sources of social support within cardiac rehabilitation.

Support from Professionals

Participants viewed the health care team as providing social support through their positive attitudes, encouragement, and individual attention and follow-up regarding personal health and progress. Participants supported this perception with the belief that

the staff “cares about [them] on a personal [level].” This perception was exemplified when the staff assisted the newcomer to “feel at home,” or assisted others by providing time to ventilate concerns or fears and encouraging them to practice learned coping strategies.

Participants in this study asserted that professional staff within their cardiac rehabilitation program also provided social support through professional support, or high quality nursing care. Prompt and expert attention to real or potential problems during exercise; promotion of an enjoyable climate; and provision of classes designed to educate participants on their disease process, living healthier and understanding the grieving process were the foundations of participant’s perceptions of professional support. In short, the professional staff’s caring and positive attitudes, professional expertise, emotional support, affirmation (acceptance), and provision of a safe environment in which to exercise was perceived as social support.

Support from the Environment

Within these programs, professionals were viewed as being responsible for maintaining a supportive and safe physical environment. As stated by these participants, the environment was equipped with “reminders” of their health condition which motivated them to exercise: For those nearing graduation or in the maintenance phase of cardiac rehabilitation, the crash cart was cited as a reminder of “what will happen” if they failed to continue to exercise. Initially, however, items such as the crash cart were asserted to produce feelings of anxiety by reminding participants of their state of health or experiences and fears while hospitalized. The participants related how the crash cart

and heart monitors became to be viewed as items supporting their feelings of safety and security as their confidence in the program and themselves increased.

Support from Peers

According to study participants, the supportive environment or climate was enhanced through perceptions of peer support. Group classes provided social interactions while the exercise environment and social norms (perceived expectations) provided modeling. The social interaction and perceived “competition” added to the enjoyment and positive feelings of the experience of participation.

Potential Barriers to Exercise

These cardiac rehabilitation programs also facilitated participants in this study to anticipate barriers to prescribed behavior and lifestyle changes. Peer discussion and classes provided informational support and affirmation. For example, “depression” and “apathy” were stated as possible barriers to continuing in the cardiac rehabilitation program. Participants believed that the classes on “grief” and other informational classes helped them to understand “what was normal.” Conceptually, the “initial fear” associated with beginning a rehabilitation program may preclude further participation, especially if it is not balanced with social support within the program.

Individuals appreciated being able to come to rehabilitation and “practice what they had learned.” Fellow classmates were important in helping many members plan strategies for future exercise. Additionally, access and availability of a cardiac rehabilitation “maintenance program” was perceived as strengthening participants’ belief that they would be successful in continuing the prescribed exercise regimen after

graduation. Specifically, a maintenance program with extended hours was desired by Group One, whose participants stated they “preferred exercising in the cardiac rehabilitation setting” as opposed to the stereotypical health club; the situational context, perceived compatibility, and peer support were perceived to be greater in the cardiac rehabilitation setting.

Other Motivators for Exercise

For participants in Phases III-IV (maintenance), a “positive attitude,” or self-motivation, was cited as necessary for continued success in long term exercise. Moreover, those who had participated in the program for a longer period perceived regular exercise as a “habit” and were confident in their belief that they would be successful in long term exercise compliance. Finally, participants in the present study related they were motivated to continue exercising to preserve their present health and reduce the chance of “having to go through [the cardiac event] again.”

Summary

These cardiac rehabilitation programs facilitated planning exercise maintenance strategies through support and encouragement from professionals and peers. Participants’ perceptions related to fear (of future cardiac events), the physical setting or climate of the cardiac rehabilitation program, and self-motivation were other sources influencing continued participation and maintenance of exercise behavior. For many, a maintenance program was available which decreased perceived barriers to future exercise.

Having presented the deductive findings of the study, a discussion of the inductive findings follows which analyzes the concept of social support and the applicability of the HPM within the context of cardiac rehabilitation. Implications of inductive analysis are presented.

Theoretical Analysis and Implications

This section of the chapter discusses the conceptualization of the perceived factors (i.e., social support and environmental support) influencing continued participation in cardiac rehabilitation and exercise. The Health Promotion Model (HPM) by Pender (1996) and models of social support provide the foundation of this discussion.

Social Support, Exercise Behavior, and the HPM

The conceptualization of the processes of social support and exercise behavior as presented in the major findings in this chapter was framed by three constructs: professional support, peer support, and environmental/contextual support. According to Pender's HPM (1996), social support is a sub-concept of interpersonal perceptions and cognitions whereas most of the perceived environmentally supportive influences can be conceptualized as situational factors. For example, participants viewed the physical setting and climate as facilitating exercise behavior. Using the HPM, this perception may be owed to feeling capable, compatible, connected, and safe in the context of the rehabilitation setting.

Applying the conceptual framework of the HPM, other contextual factors influencing current participation in cardiac rehabilitation and motivation to exercise can be described as activity-related affect, and perceived benefits (and barriers). According to Pender

(1996), the individual's subjective feelings are context related (environmental), activity-related, or self-related. The findings of this study suggest that professional support and other sources of social support served to balance any negative affective responses occurring during participants' beginning phases of cardiac rehabilitation. Perceptions of support could very well be a major factor motivating individuals to continue in the program by assisting them to feel connected, or comfortable, within their environment.

As individuals in the two programs continued to participate and exercise, they began to experience the benefits of exercise, such as "feeling better," weight loss, and blood pressure reduction. Further application of the HPM affirms that these experiences influenced participants' affective state associated with exercise and served as motivation to continue exercising through activity-related feedback. Next, the longer participants continued in the program, the more they perceived the environment and program as socially supportive. Professionals and peers were perceived as part of this "supportive environment." This study suggests that these and the above factors (social support and situational influences) assisted these individuals to remain in the program and begin to establish exercise as a habit. This proposition leads to the incorporation of another concept within the HPM, prior related behavior.

The concept of prior related behavior in the HPM is categorized as part of the construct individual characteristics and experiences. Pender (1996) explains that the direct effect of past behavior is proposed as producing "habit strength," which predisposes one "to engage in the behavior automatically" (p. 67). Indirectly, prior

experience with exercise influences perceptions of self-efficacy, benefits, barriers, and activity-related affect (Pender, 1996). Bandura (1986), as noted by Pender, contends that the actual enactment of a behavior and its associated feedback provides personal capability information, or efficacy information. Participants who were near completion of their program perceived exercise as a habit.

In these cardiac rehabilitation programs, environment, professionals, peers, activity-related affect, and perceived benefits provided the necessary positive external and internal feedback to help motivate individuals to continue in the program, thus increasing perceptions of exercise self-efficacy. Likewise, the variables habit strength and skills mastery positively influenced self-efficacy for these participants.

In this study, participants stated they were concerned with preserving their health and were “fearful of what might happen” if they didn’t continue participating and exercising. This “uncertainty of future health status” was directly related to a diagnosis of coronary artery disease (perceived health status) and was a motivator for exercise in these participants. Pender (1996) includes perceived health status as a sub-concept of personal factors in the HPM. However, this source of motivation may be explained as fear for those who had surgery or a high-risk event, like a heart attack or emergency medical intervention. Fear, as a motivational source, is not included in the HPM but Pender recognizes that fear, or “threats,” can be a source of motivation for health behavior in some situations. She adds that threats in the distant future “lack the same motivational strength” and for this reason are not included in the HPM (p. 52). In this study, fear may

be described as influencing exercise self-efficacy through the concept activity-related affect or situational influences.

Self-motivation was the last factor cited as influencing future exercise behavior. This concept is not included in the HPM as a major construct but, according to Pender (1996), self-motivation “contributed to the explanation of exercise frequency” in a number of studies (p. 193). Conceptually, self-motivation supports the construct of personal factors as a determinant of health behavior and confirms Pender’s representation of self-motivation as a sub-concept, or variable of personal factors.

In summary, the most often cited motivators of participation and perceived future exercise behavior in this study can be attributed to interpersonal perceptions and cognitions (social support) and situational factors. Perceived sources of social support (viz., peer support, professional support, family support) were, according to the HPM, more precisely interpersonal influences. Many of the perceived environmentally supportive forces were cues to action, a concept deleted by Pender (1996) in the revised HPM but accounted for by situational factors. Because of the applicability of the HPM in this study, the researcher believes it a useful model for guiding professional nursing practice in cardiac rehabilitation. It is logical to suggest that social support be incorporated into cardiac rehabilitation programs’ conceptual models for health promotion.

Social Support versus Professional Support

According to Norbeck (1981) and others, professional support does not constitute social support. In nursing, this statement is founded in the fact that the

client-professional relationship is short-term and not reciprocal in nature, that is, the nurse delivers care; the client receives care. However, this study offers a different paradigm: In the cardiac rehabilitation setting, the approach to care is based on a self-care framework where clients move along a continuum of intermediate care to preventive care, or maintenance. Considering the level of care delivered during their cardiac event, clients come full circle from a tertiary (intense) level of nursing to a primary level of nursing care that begins upon entrance to the outpatient cardiac rehabilitation program. The literature (Norbeck, 1981; O'Brien, 1993; Woods et al., 1989) speaks of the intense support that is needed during the acutely stressful situations and the long term, less intense support that is needed during chronic (debilitating) illness. Cardiac rehabilitation represents a transitional stage in recovery (Bramwell, 1990), or an intermediate versus acute situation which may require different levels and duration of support.

During rehabilitation, the client-professional relationship is usually long-term which may influence clients' perceptions of professional support as social support. In this study, most believed that social support and professional support could "not be separated." Professional care, according to these participants, decreased stress and anxiety, promoted recovery and adaptation to lifestyle changes, and coping. As reported, professionals in cardiac rehabilitation and in the tertiary setting were perceived as sources of social support in that professionals' interventions were delivered with the component of care/concern.

Social Support and Recovery

Secondary analysis and generation of sub-themes support the usefulness of several substantive theories that describe the processes of adjustment and healing. The process of life-style change (see Appendix B) (Frenn et al., 1989) identifies forces and patterns influencing change. In Frenn et al. research, rehabilitation program components, including relationships with staff and peers, exercise training, classes, and information, were described as having the potential to “enable” or “disable” lifestyle change.

Applying the theory of healing (Fleury et al., 1995) to cardiac rehabilitation, it became evident that participants reevaluated themselves and possibilities for the future (see Appendix B). Priorities were redefined as participants made the decision to continue in the program. This model, and the study findings, suggest that depression, anger, and apathy increase the risk of dropping out of the program and that newcomers are especially at risk as they compare themselves and their capabilities to others. Being forced to start out slowly can be frustrating and may produce angry feelings (negative responses). In the current study, participants found strength and support in the program which helped them grow through the uncertainty surrounding their cardiac event and recovery. Next, challenge was created through the guidance of the staff and support of peers. Lastly, participants began to accept a new self and find meaning and purpose in their experience as evidenced by empowering other participants and participating in group discussion. In summary, these cardiac rehabilitation programs contributed to the healing process by providing social support and positive situational influences.

Models of Social Support

This study sustains Pender's and others' findings of the direct and indirect models of social support. As a stress buffer, social support in these cardiac rehabilitation programs indirectly affected the outcomes of self-esteem and perceived security. Directly, social support influenced coping and adaptation to lifestyle changes, loss, and uncertainty of future health—all of which have emotional, behavioral, psychological, and physiological effects. The findings of this study suggest that both direct and indirect effects of social support may influence exercise ability and readiness, motivation to continue in cardiac rehabilitation, and exercise self-efficacy.

Study Conclusions

Analysis of focus group interview data resulted in a description of the nature and function of social support within two cardiac rehabilitation programs as well as factors and situations within these programs perceived as influencing participants' current and future exercise behavior. The data are sufficient to conclude that, for these study groups, the family, professionals, and peers are sources of social support important in promoting participation in cardiac rehabilitation, planning for future exercise (enabling change), and healing. Constructs of the HPM were supported in this study as factors motivating the health behavior exercise. Perceptions of exercise self-efficacy were influenced by professional feedback, activity-related feedback (somatic and affectual responses), modeling by peers, and peer support. Participants in this study also perceived challenge as a motivating dimension of peer support, that is, they felt challenged by their peers. Information and stress management classes aimed at supporting the individual in

adaptation to lifestyle changes and coping helped to validate normal stress responses and as with perceptions of social support, contributed to the value of the program. Those in a maintenance (Phase IV) program of cardiac rehabilitation cited professional support and family support as influencing exercise self-efficacy.

Synthesizing and interpreting the meaning of the findings, a logical concluding statement is that social support from professionals in cardiac rehabilitation is most important for continued participation early in the program whereas peer support and assistance in planning for continued exercise is valued later in the program (see Figure 3). In short, this study concludes that for these cardiac rehabilitation programs, the impact (function) of social support is motivation for continued program participation, increased motivation to exercise, and increased self-efficacy pertaining to future exercise behavior. This study also deduces that sources of social support within cardiac rehabilitation having the most impact were the cardiac rehabilitation professionals and program peers.

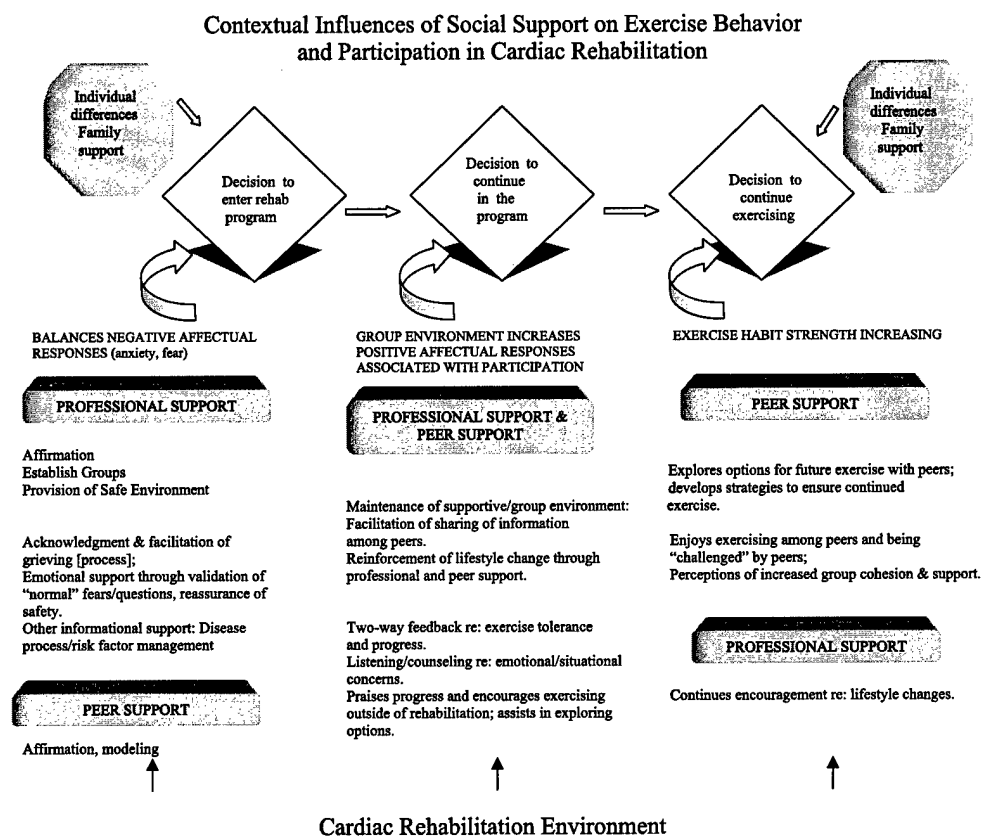


Figure 3. Contextual Influences of Social Support on Exercise Behavior and Participation in Cardiac Rehabilitation.

Limitations

As with all qualitative studies, this study is limited to the extent that data collection or analysis inherently may have been affected by possible, although unconscious, researcher biases. Considering that each group participant may have responded more or less than another, analysis or conclusions could be skewed. Participant biases or experiences that distinguished them from other potential informants may have affected the actual data. The characteristics of the group structure or differences between programs may have affected obtainable data. For example, most of Group Two members were near graduation or were in Phase IV of rehabilitation whereas Group One included several newer members. However, the data are valid since the information is an exact account of participants' (subjects) views in response to the researcher's questions and as part of the group's discussion.

Although social support (viz., professional, peer, and environmental support, were found to clearly influence current participation in cardiac rehabilitation and influence exercise self-efficacy, the question remains as to what extent each contributes to increased exercise self-efficacy. In this study, many factors contributed to participants' belief that they would be successful in continuing to exercise after completing their rehabilitation program. This study has provided the groundwork for future study by identifying the multiple factors and variables that influence exercise self-efficacy in cardiac rehabilitation and by clarifying the applicability of concepts within the HPM. Finally, this study documented perceptions of male participants and the researcher

therefore recommends that perceptions of social support and factors influencing participation and exercise self-efficacy be explored from the female perspective.

Practice Implications

To have a lasting impact on individuals' behaviors and recovery, the cardiac rehabilitation team must do all it can to prevent dropout. This author supports the recommendation by Bramwell (1990), Cosmoss (1988), and Norbeck (1981) for the cardiac team to assess clients' perceptions of social support as a possible barrier to program participation and the prescribed exercise regimen. Inquiry as to the client's social network and perceived quality of social support may increase client's perceptions of social support in cardiac rehabilitation as well. As suggested by this study, support from the professional can help balance fear and anxiety (negative affective responses) associated with entering a cardiac rehabilitation program. As indicated in this study, fear and anxiety may be related to uncertainties of future health, physical capabilities, and unknown expectations of a new environment (cardiac rehab). Professionals can provide extra assurance of safety and explanations of the purpose of close monitoring and equipment, such as the crash cart. To deliver individualized care, the professional must be aware that some participants will need more individual attention, guidance, and reassurance than others. An assessment of the individual's perception of the environment and an inquiry as to how to facilitate enjoyment in rehabilitation may convey concern and support as well.

Participants' anxieties may also be associated with the actual decision to begin the program and continue in the program; participating means confronting their disease and

accepting recovery as a long term process. Applying the substantive theory of healing (Fleury et al.), embarking on the road to recovery after a cardiac event means finding a new self (i.e., healing and adapting) and redefining perceptions of wellness through an active, self-participating form of healing. Providing classes on grieving early in the program and exploring participant's self-perceptions and previous coping strategies may enable the process of change and healing.

As noted in this study, the information received in the hospital and the encouragement of family were important in facilitating participants' decisions to enter cardiac rehabilitation. Because recovery begins during hospitalization this researcher recommends that the client and the family members receive an introduction to cardiac rehabilitation while hospitalized, especially if there is no formal inpatient (Phase I) cardiac rehabilitation program.

For the cardiac client, continued support is important in long term life-style changes and recovery. As noted in the literature, part of the plan of care should include assisting the individual to identify potential barriers to long term exercise and formulating strategies for continued maintenance of this behavior. A discussion of how the client has managed to make all or most cardiac rehabilitation appointments can offer insights. The individual returning to work may be anticipating a new routine; these schedules must be considered. As suggested by these participants, cardiac rehabilitation programs would do well to expand operating hours and provide a maintenance (Phase IV) program for its graduates and spouses; a larger population could be served and for many, barriers to participation could be decreased.

Equally important are individual perceptions of motivating factors for exercise. For most members in these groups, exercising among peers increased self-efficacy as related to future exercise and long term behavior change. The findings of this study imply that professionals should attempt to promote peer support/social networking. Scheduling participants' class and exercise time with individuals who have similar interests or share some common aspect of their cardiac or life experience are possible interventions. In most cases, similarity can pertain to age groups or those with similar interests, professions, or diagnosis.

As stated in the literature, client goals and desired outcomes are important to consider when providing professional guidance and support. In this study, positive feedback was perceived as social support and enhanced self-efficacy with personal and program goals. This researcher therefore recommends that the professional assist individuals to formulate attainable short-term goals and provide frequent, informal feedback.

Summary and Recommendations for Further Study

As the literature has revealed, studies of social support in nursing have been attempts to explore the interpersonal and tangible needs of the client with short-term, high intensity needs and on the other end of the spectrum, those with long-term, less intense needs. This study offered a view into an intermediate support situation that expands the concept of social support in a context related fashion: A comprehensive description and contextual picture of the nature and function of social support within cardiac rehabilitation is the contribution of this study. Additionally, information pertaining to the sources of social support during the early phases of recovery following a cardiac event

was documented. Finally, the supportive forces facilitating continued exercise and participation in an outpatient cardiac rehabilitation were delineated.

Professionals can use the findings of this study to guide the cardiac rehabilitation care team in providing social support and a socially supportive environment for their clients. Because socially supportive aspects of cardiac rehabilitation have been found to influence the participant's exercise self-efficacy, or belief that he will continue to exercise after completion of the program, this researcher urges cardiac rehabilitation programs to evaluate their approach to assessing social support and exercise barriers. Likewise, assessing exercise self-efficacy is a strategy that cardiac rehabilitation programs can use to evaluate participants' progress toward incorporating exercise as a life-long behavior. Development of a self-efficacy tool specific to the cardiac rehabilitation population would quantify self-efficacy with respect to the exercise prescription. Questions for further study include: (a) What impact does a formal Phase I cardiac rehabilitation make? (b) When is a Phase I program cost-effective? (c) Do perceptions of social support within cardiac rehabilitation differ for those who drop-out from an outpatient program? (d) What strategies are used in rehabilitation programs to reduce barriers to exercise? (e) Does increased exercise self-efficacy in cardiac rehabilitation have an impact on long term exercise compliance?

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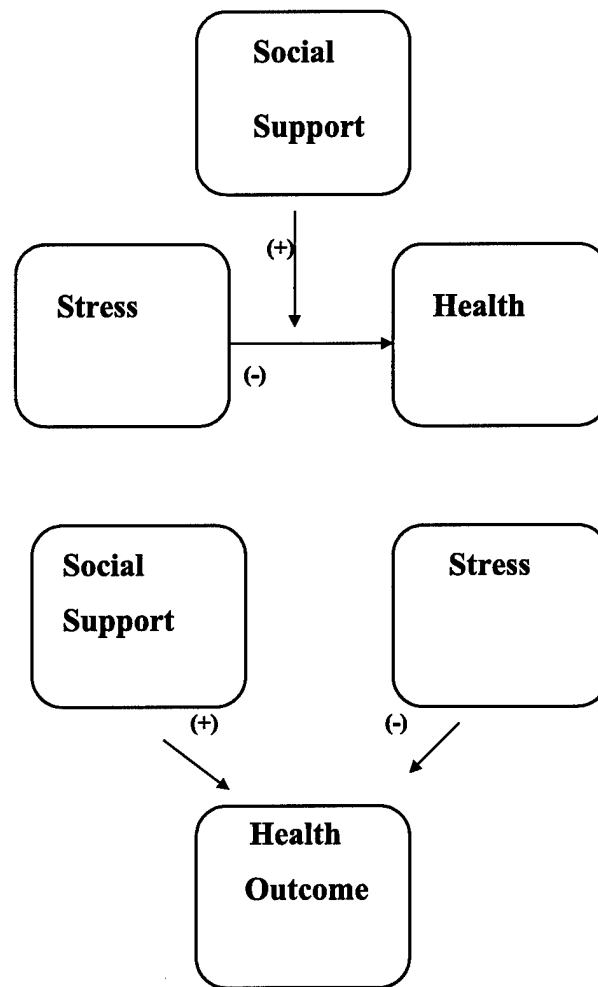
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APPENDIX A

Buffering and Direct Effects of Social Support

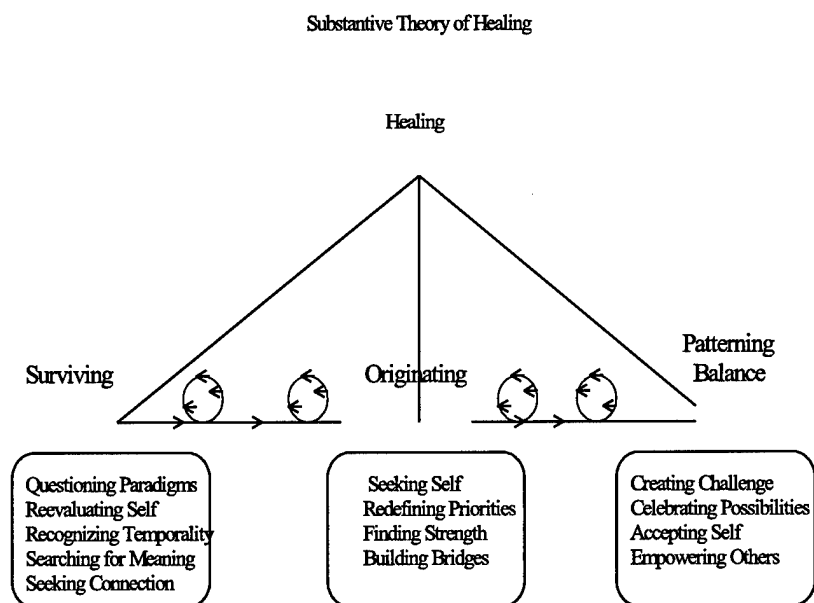
Buffering and Direct Effects of Social Support



Adapted from Yates et al. (1994). Theoretical perspectives on the nature of social support in cardiovascular illness. *Journal of Cardiovascular Nursing*, 9(1), 1-15.

APPENDIX B

Substantive Theory of Healing

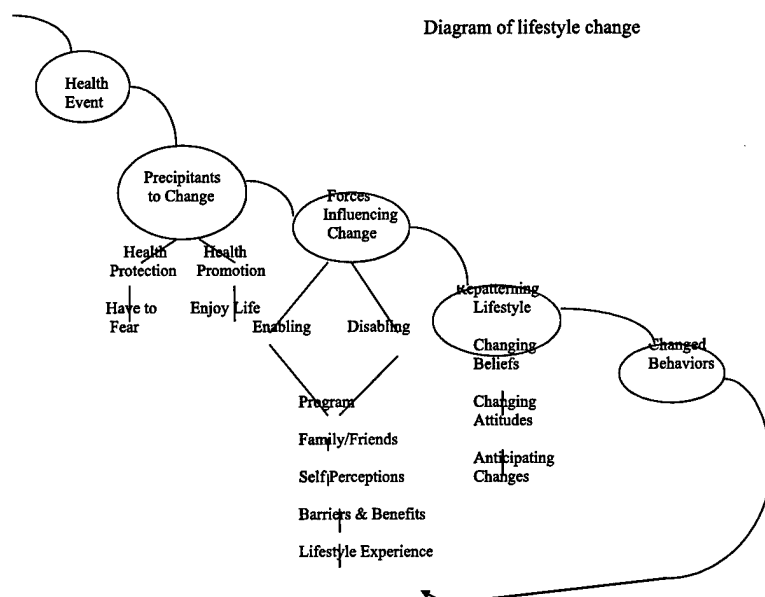


From, Fleury et al.(1995). Life after a cardiac event: Women's experience in healing." *Heart & Lung*, 24(6): 474-482. Reprinted with permission.

APPENDIX C

Diagram of Lifestyle Change

Diagram of lifestyle change



From Frenn et al. "Lifestyle changes in a cardiac rehabilitation program: The client perspective." *J Cardiovascular Nursing* (1989), 3(2):43-55. Reprinted with permission from Aspen Publishers, Inc., copyright 1989.

APPENDIX D
Institutional Approvals

**INSTITUTIONAL REVIEW BOARD FOR HUMAN RESEARCH (IRB)
OFFICE OF RESEARCH INTEGRITY & RISK PROTECTION (ORIRP)
MEDICAL UNIVERSITY OF SOUTH CAROLINA
171 Ashley Avenue
Charleston, South Carolina 29425
(Multiple Assurance #M-1012)**

STATEMENT OF BOARD:HR # 7244

This is to certify that the research proposal entitled:

Perceived Social Support and Exercise Efficacy in Cardiac Rehabilitationand submitted by: NEELY, LORA F., R.N.Department: Nursing

to NO SPONSOR FUNDING for consideration
has been reviewed by the IRB and approved with respect to the study of human
subjects as adequately protecting the rights and welfare of the individuals
involved, employing adequate methods of securing informed consent from these
individuals and not involving undue risk in the light of potential benefits
to be derived therefrom.

Approval Date:

06/09/97


Chairman, I.R.B.
Edward C. Conradi, M.D.

STATEMENT OF PRINCIPAL INVESTIGATOR:

As previously signed and certified, I understand that approval of this research
involving human subjects is contingent upon my agreement:

1. To report to the Institutional Review Board for Human Research (IRB)
any adverse effect or research related injuries which might occur in
relation to the human experimentation. I have read and comply with
IRB reporting guidelines published in Reflections (January, 1992).
2. To submit in writing for prior IRB approval any alterations to the plan of
human research.
3. To submit timely continuing review reports of this research as requested by
the IRB.
4. To maintain copies of all pertinent information related to the research
activities in this project, including copies of informed consent agreements
obtained from all participants.
5. To notify the IRB immediately upon the termination of this project, and/or
the departure of the principal investigator from this Institution and the
project.

HR # 7244

Additional Endorsements
Jean Clark, do hereby grant permission for Lora F. Neely,
 (Risk Manager, Roper Hospital) (Investigator)

Re: to access and recruit subjects starting in the month of July 1997 as outlined in the thesis proposal entitled
 "Social Support and Exercise Efficacy in Cardiac Rehabilitation." I also grant permission to conduct the
 study/interview in a classroom located within the heart fitness center or within Roper Hospital not later
 than September 3, 1997.

Signed Jean S. Clark, Date: June 3, 1997, W. (NIP)
 The parties signing below agree that all human subjects research conducted by the
 noninstitutional investigators in conjunction with the the Medical University of SC will be
 conducted in accordance with DHHS and FDA regulations for the protection of human
 subjects. Investigators will also comply with any stipulations or requirements of the MUSC's
 IRB for Human Research. This Agreement is not effective until signed by the Investigator,
 the NonInstitutional Official, and the IRB Chairperson cited below.

I. Signature of the Noninstitutional Investigator

I will abide by the provisions of this Agreement and by the stipulations of the
 designated IRB.

Signature: _____ Date: _____
 Name: _____ Title: _____
 Office Address: _____
 Phone: _____

II. Signature of Noninstitutional Official

This institution acknowledges the designation of the MUSC's IRB for review and
 monitoring of the research protocol to be conducted at their facility.

Signature: Jean S. Clark Date: June 3, 1997
 Name: Jean S. Clark Title: Risk Manager
 Office Address: Roper Care Alliance
316 Calhoun St., Charleston, SC 29401
 Phone: 724-2291

*Service Line Director
 for Health Informatics*

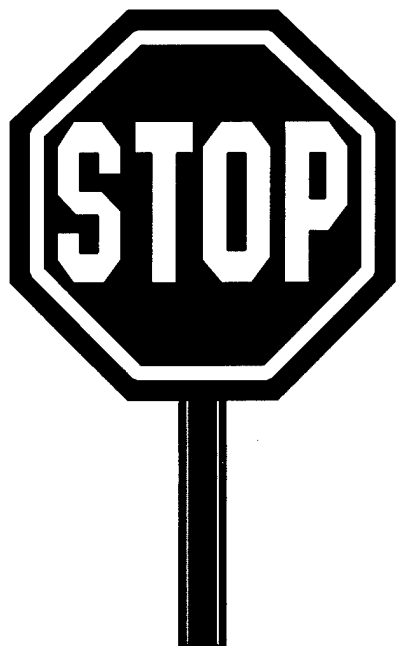
III. Signature of MUSC's IRB Chairman

This institution authorizes the designation of its IRB for review of protocols to be
 conducted under this Agreement. MUSC's IRB is constituted under OPRR-
 approved Assurance #M-1012.

Signature: E. Conrad Date: 6/9/97
 Name: Edward C. Conrad, M.D. Title: Chairman
 Office Address: MUSC/ORIRP 501 Wachovia Bank Building
171 Ashley Ave., Charleston, SC 29425
 Phone: 803/792-4148

APPENDIX E

Recruitment Flyer and Sign-up Sheet



STOP TO
SMELL
THE
ROSES...



**AND...TO SIGN UP FOR A
CARDIAC REHABILITATION
AND SOCIAL SUPPORT
INTERVIEW/STUDY!!!!!!**

To volunteer for this study, you must meet the following eligibility criteria:

1. Male over age 18.
2. Attend cardiac rehab at least twice weekly, and for at least 4 weeks
3. Speak English, read, and hear without use of an aid/appliance.

To volunteer or find out more, sign your first name and telephone number on the roster located _____. **THANK YOU VERY MUCH!!!!**

***COMPLIMENTARY FRUIT SOCIAL WILL BE
PROVIDED FOR THOSE BEING INTERVIEWED!***

[Volunteers will be compensated up to \$3 for any parking expenses incurred during participation.]

CARDIAC REHAB INTERVIEW/STUDY

For more information, contact Capt. Lora F. Neely of the MUSC College of Nursing at:

556 - 1695 OR sign below and the investigator will call you. **THANK YOU!**

Note: Signing below does not constitute consent to participate.

FIRST NAME	TELEPHONE# (used only to verify desire to volunteer)
1.	
2.	
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For more information, contact Capt. Lora F. Neely of the MUSC College of Nursing at:

556 - 1695 THANK YOU!

APPENDIX F
Consent Agreement

HR # 7244

MUSC/Page 1 (ADULT)

**MEDICAL UNIVERSITY OF SOUTH CAROLINA
INFORMED CONSENT AGREEMENT**

I, _____, do hereby consent to participate in
(Name of participant)
a research study. The researcher, _____, has
(Name of Investigator)
explained orally to me, as described below, and I fully understand the following:

- A. PURPOSE:** To identify types, sources, and examples of social support available within cardiac rehabilitation as perceived by the participant. To identify if aspects of cardiac rehabilitation impact on the participant's judgment that he will be successful in continuing to exercise after graduating from the rehabilitation program.
- B. PROCEDURES:** I will be interviewed as part of a group consisting of ten participants from my rehab center. One group interview, performed by the researcher, will take place at my rehab center. Just prior to the interview, I will complete a form asking for my age, marital status, educational level, diagnosis, level of income, and occupation (or retirement status). My name will not appear on the this form. A name tag, with my first name only, will be provided and worn during the interview. Interview questions will inquire my perception of the role of cardiac rehabilitation in facilitating recovery and achievement of recovery and exercise goals. Specifically, I may be asked to give examples of things or situations that support my recovery and my ability to continue to exercise. The group interview will be audio recorded. The tape recorded interview will be fully transcribed and names will be changed during transcription of the recorded material. Tapes will be destroyed after completion of the study.
- C. DURATION:** The interview will last not more than 1 ½ hours. A complimentary fruit social will be provided prior to the interview.
- D. POSSIBLE DISCOMFORTS AND/OR RISKS:** Disclosure of identity and confidentiality (disclosure of personal information) are potential risks if I choose to participate in a group interview. Each participant can decide at any time not to disclose information. No physical risk or discomforts are involved.
- E. POSSIBLE BENEFITS:** Individuals may gain insight into the available social support resources. Comradeship may be enhanced through group participation. Satisfaction gained through involvement in research which may contribute to the rehabilitation of others in similar programs.
- F. ALTERNATIVE METHODS:** Individual interviewing are possible methods. I may choose not to participate.
- G. COST OF PARTICIPATION:** None.
- H. COMPENSATION:** The researcher will reimburse participants up to \$3 if paid parking is used.

HR #7244

MUSC/Page 2 (ADULT)

Lora F. Neely, RN, BSN, CCRN, (803/556-1695) has agreed to answer any inquiries that I may have concerning the procedures and has informed me that I may also contact the Medical University of South Carolina Institutional Review Board for Human Research (803/792-4148) directly concerning the research study and research subjects' rights. This Board administers the agreement with the United States Department of Health and Human Services/Office for Protection (OPRR) covering the protection of human subjects (#M-1012).

I understand that in the event of any injury directly resulting from the research procedures to me, reasonable medical treatment not otherwise covered by third party payments or study sponsors will be available free through the Medical University (contingent upon approval of the SC Budget and Control Board). Financial compensation is not available for medical treatment elsewhere, loss of work or other expenses. I may contact the Medical University of SC Hospital Medical Director (803/792-3932) concerning medical treatment.

I understand that my records of participation in this study are not accessible to the general public and every effort will be made to maintain confidentiality. However, all records in S.C. may be subject to subpoena by a court of law. Information that may be gained from this study will be used only for research and educational purposes. Information may be published with permission of the principal investigator in medical journals, but my identity will not be revealed. However, identifying information will be available to monitors from the MUSC IRB for Human Research, the sponsor of this study (if applicable), and the US Food and Drug Administration.

It is understood that participation is totally voluntary, and I may choose not to participate. I also understand that I am free to withdraw my consent and discontinue participation at any time. Discontinuation will in no way jeopardize my ability to receive treatment now or in the future at this Institution.

I agree that participation in this study may be terminated by the investigator at any time without regard to my consent if it is felt that this course of action is in my best interest, or if I violate study requirements, or for administrative reasons.

I will receive a copy of this informed consent after it has been read, understood, and signed.

SIGNATURE OF RESEARCHER OBTAINING CONSENT

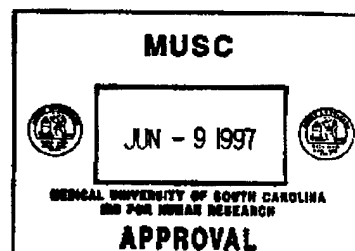
SIGNATURE OF PARTICIPANT

WITNESS

SIGNATURE OF LEGAL GUARDIAN (if applicable)

DATE OF CONSENT

WITNESS



APPENDIX G
Demographic Data Form

DEMOGRAPHIC DATA

Directions: The following items ask for basic demographic data and your hospital diagnosis or procedure(s). Please fill in the blanks or place a check beside your response.

Age: _____

Gender: (Male)

Race: _____ Married: _____ or _____ not married

_____ Caucasian

_____ Black

_____ Hispanic

_____ Asian

_____ Other

Occupation/former occupation:

Income: Please check your annual gross income; if married, check your combined gross income prior to taxes.

Less than \$1000 _____

\$1000 to \$2999 _____

\$3000 to \$5999 _____

\$6000 to \$8999 _____

\$9000 to \$9999 _____

\$10,000 to \$11,999 _____

\$12,000 to \$14,999 _____

\$15,000 to \$24,999 _____

\$25,000 to \$49,999 _____

\$50,000 to \$74,999 _____

\$75,000 or over _____

Educational Level: _____ years of education

Grade School 1 2 3 4 5 6 7 8 High School 9 10 11 12

College 13 14 15 16 Graduate School 17 18 19 20 21 22

Hospital Diagnosis/Procedure(s) within the last year:

_____ Coronary Artery Disease

_____ PTCA (Balloon Angioplasty)

_____ Coronary Bypass Surgery

_____ Congestive Heart Failure

_____ Vascular surgeries

_____ MI (Heart Attack)

_____ Athrectomy

_____ Heart Valve Surgery

_____ Angina (Chest Pain) (or Cardiomyopathy)

_____ Other: _____

type: _____

APPENDIX H
Interview Guide

Interview Guide

Part 1

1. What does social support mean to you?
 - Give me some examples of actions, or persons that provide support or assist you.
2. Are there different types of social support?
 - Financial?...transportation?...information?
3. Who provides these types of support?
 - Can you think of other types of support?
 - Provided by whom?
4. Does social support exist within this program?
 - Who provides support in this program?
 - How is this support delivered?
 - What type of support is provided by...?
5. Are there other aspects of cardiac rehabilitation that support you?
 - In what way?
6. Do the professionals in this program make a point to find out about your social support systems, that is, whether or not your need for a type of support is being met?
7. Who or what is the most important source of social support in this program?

Part 2

1. Does the staff stress the importance of exercise?
2. Would you say that this environment encourages you to keep coming (to exercise)?
 - Has this environment in any way helped you to establish exercise habits such that you will continue to exercise after completing this program?
3. Has the program served to help you identify or experience the benefits of exercise, e.g., do you feel better after exercise?
4. Does being aware, or informed of these benefits of exercise make you believe that you will be able to continue to exercise regularly?
5. Has the staff or the program in any way helped you to identify possible barriers, or things keeping you from continuing to exercise?
 - Have they assisted you in planning ways to keep exercising regularly?
 - Does the staff assist you in establishing a home exercise plan, or a plan to help you stay regular in your exercise?
6. Do you believe that you will be successful in continuing to exercise after graduating from this program?
7. What or who has had the most influence in forming this belief?
 - Teaching and sharing of information by the staff?
 - Personally experienced benefits of exercise?
 - Emotional support or encouragement from the staff?
 - Peer support?

ABSTRACT

Social support and exercise are widely known to effect outcomes in the cardiac client. Social support has been reported as influencing motivation for health behavior, including exercise. This study explored dimensions of social support within cardiac rehabilitation and perceived impact on participation and exercise self-efficacy. Structured by a 14-item interview guide, two focus group sessions of male participants generated qualitative data. Content analysis revealed staff, peers, and the physical environment and context (situational influences) as the most often cited sources of social support influencing program participation and exercise self-efficacy. Whereas support from professionals positively influenced participation early in the program, peer support prompted participants to plan and look forward to exercising beyond program completion. Interventions perceived to promote a safe environment were also perceived as social support.